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HENRY C. PEARSON,
EDITOR.**HAWTHORNE HILL,**
ASSOCIATE.

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OUR TWENTIETH ANNIVERSARY.

WITH this issue THE INDIA RUBBER WORLD completes its twentieth year of continuous publication, without change of name or of editorial management. So recent has been the development of trade journalism, as the term is now understood in its best sense, that few journals in the country devoted to special interests have existed under like conditions for so many years.

Twenty years! One-fifth of a life that attains to one hundred! Or, more accurately, one-third of a centenarian's active life—the first and last score being but preparatory, one for life, the other for death. In some cycles twenty years contain but little of accomplishment, but not in this age. Contrast the happenings in any period of 6000 working days of Methuselah's time with the days that elapsed between 1889 and 1909! What a crowding of events! What changes political, geographical, and, above all, industrial! And what of the rubber trade? The story of its growth; of its expansion in every conceivable di-

rection; of its spectacular successes—all this would fill volumes.

At once in this sort of retrospect memory visualizes the high lights in the panorama of events. In bold relief as makers of history, as organizers each with his own strongly marked personality, certain figures instantly project themselves into memory's foreground. Elisha Converse, reserved, thoughtful, quietly capable; Joseph Banigan, impulsive, sagacious, affable; Evans, fiery, alert, aggressive—and scores of others who crowd to memory.

At the beginning of this twenty years Dr. Goodrich, Thomas Mayall and Christopher Meyer had but just passed to the great beyond. During its brief term the trade mourned the loss of such men as N. C. Mitchell, George A. Alden, E. H. Clapp, Wheeler Cable, Benjamin Taft, George F. Hodgman, Charles H. Dale, James Bennett Forsyth, and others whose names were synonymous with the growth and permanence of the trade. Their mantles have fallen upon younger men no less capable and to whom history will doubtless accord just as much in the way of trade accomplishment. The pioneer days perhaps are over, and the era of industrial coöperation and consolidation which had its beginnings since 1889 appears to be at hand.

A few years back there was no Lead trust, no Whitening trust, no Rubber trust; now they and hundreds of others are here, and are the natural outgrowth of our great industrial expansion.

Twenty years ago rubber planting was a joke. "Why not cultivate coal?" scoffed one critic. "About as practical as the romances of Jules Verne," affirmed another. Yet to-day the rubber trade of the world not only believes in rubber cultivation, but has invested millions of dollars in it and very profitably.

The laboratory as an adjunct to the rubber mill was lightly thought of by the practical manufacturer but two decades ago. To-day the rubber chemist is an integral part of nearly every successful rubber factory organization.

As far as machinery goes, washers, mixers, calendars, presses, and vulcanizers are still employed. They are heavier, to be sure, and speedier, and are supported by phalanxes of minor machines, but the old-time procedure remains unchanged. Few revolutionary processes can be recorded. By the use of the vacuum dryer, to be sure, rubber can be compounded the same day it is washed instead of months later, and

that is about the only change in processes that are generally applicable. Certain types of goods once extremely popular have entirely disappeared from the market—as, for example, the solarized gossamer. But other products promptly took their place, as did the showerproof or cravenetted garment. Of new applications of rubber that have grown to be special lines of manufacture of ever increasing magnitude there is the American golf ball and the pneumatic tire.

During a few years past the price of rubber has gone up higher than ever before, and after each rise has dropped lower than any one thought possible. There have been attempted corners that have brought disasters to the speculator. There have been a few valuable compounding ingredients added to the great variety already in use. There have been numbers of excellent plastics that have proved themselves of much value. And ever new and ever interesting there has been the semi annual discovery of synthetic rubber. As a barometer of rubber trade conditions this last item is infallible. More than ever before during the last twenty years has this discovery been made. As we go to press we learn that it has just appeared simultaneously in England and the United States and as an augury of present and continued trade prosperity it stands unrivaled.

In further commemoration of the twentieth anniversary of THE INDIA RUBBER WORLD an issue of the paper to appear shortly will be devoted to a review of the india-rubber and allied trades during the past two decades. This is designed to be an issue of unusual interest, embracing contributions from the best authorities in the trade.

RUBBER IN THE AIR.

THE fact that on the first day of the aviation contests at Rheims one of the contestants was fined for "reckless flying" may be regarded by many as of small moment, and by some as a mere joke. But really is this not an indication that aerial navigation has developed into one of the serious facts of modern life? What was the automobile before its use arrived at the dignity of recognition by the courts? The mere imposition of fines against motorists for legal overspeeding was legal recognition that the theretofore unheard of automobile "had arrived"; likewise the fining of aviators for breaches of the peace in the clouds—or above them—is an admission by the public authorities that men can fly, no matter how nonsensical such an idea may have seemed when the present generation were playing with hoops and tops.

Only a decade ago, when the first automobile parade in New York was organized, half the cars which ventured into a ten mile contest had to be drawn home with horses, and the best of the cars merely crept along. But now we see a flying machine doing 84 miles without stopping, at the rate of 42 miles an hour, and getting home without

aid. Men surely are flying nowadays, with such success as to justify the consideration of flying machines in connection with preparations for war. The use of the automobile in war also has been much considered, but the trouble has been that wars don't always happen often enough to test new inventions thoroughly before something newer turns up.

No doubt in the case of the theoretical invasion of Boston, in the American military maneuvers last month, the automobile and the motorcycle could have been used to marked advantage had the commanders of the forces been receptive to modern ideas. The fact that the automobile trucks actually in the campaign did not keep the food supplies near enough to the troops for use was no fault of the trucks; they had, owing to prearranged plans, to keep behind certain other units in the marching columns. But by the time the next maneuvers occur it may be that commanders with ideas more up to date will contrive to have aeroplanes carrying food high in the air to whatever point hungry soldiers may be in need. One excuse for certain failures in the Boston war game was that some supply ships were interrupted at sea. Could such an inconvenience happen with the use of air ships, free to go over land and sea alike?

True, it still is a question whether aviation has become "practical"; at any rate it already is of widespread interest as sport, and calls for just as much rubber under one heading as the other. What if a flying machine does fall now and then? Were not seven lives lost in the late motoring contests on the Indianapolis "speedway"? And are not vastly more people kicked to death by horses than ever suffer injury in motoring? It is conceivable that in a very few years the newspapers will cease to regard as a matter of interest the fall of a biplane from the clouds, with fatal results, and find novelty again in reporting such deadly accidents as the falling of truck drivers under horses' hoofs—something now so common in New York as not to attract attention. That is, horses will become so rare in cities that any excuse to mention one will be welcomed by the news gatherers.

It must be admitted that the flying machine is in the air. What is more, it is daily becoming more the custom for it to remain there, instead of falling into tree tops at inconvenient moments. THE INDIA RUBBER WORLD has preached the gospel of the automobile to the rubber trade; while continuing the same line of discourse, it feels impelled to call the minds of the trade to even higher things, such as have figured of late in the international exhibition of aerial vehicles at Frankfort-on-the-Main and the exhibitions of real flying at Rheims.

A LAST WORD ON THE TARIFF.

BUSINESS conditions in America, measured by every recognized standard, show an improvement over what has prevailed for a year or more past. In other words, business is approaching the normal American

condition—that of continual improvement, keeping pace with the constant growth of a population that has a buying capacity not equaled in any other country, in any age. It was a scare, not a “panic,” that happened less than two years ago. A few individuals having undue influence with a smaller number of banks which before were of good repute, used their power to private advantage and against the general good, with the result that some honest institutions were forced temporarily to close their doors. The effect upon the general financial public was not of fear for the future, or even of immediate distrust, but merely of caution. But this caution was so widespread and so ramified that many branches of trade felt it. For example, if steel manufacturers curtailed their output, the railways, having therefore less traffic, bought fewer supplies, and this meant smaller demands upon certain rubber factories, and the importation of crude rubber declined—with the result of lowering the quotations for rubber everywhere. The whole “financial depression” of 1907 may be summed up in few words—in so far as it may be considered apart from worldwide financial conditions—too much business had been attempted for the capital employed; some people had attempted to get rich “too quick.” The banking world called upon business men to call a halt, and for a while the United States rested. But there was no loss of real wealth, though there may have been a readjustment of ownership, due to the impatience of this class, or the want of preparedness of another class for any sudden and unexpected crisis. The net result is the lessening of certain bad features in banking—the vital center of the modern business world—and that people in industry and trade are profiting by lessons of caution.

The country is prosperous again. The country has been prosperous for a long time. This country cannot be otherwise than prosperous, with so many millions of honest and intelligent people working constantly to improve their condition—materially and morally. Would it not be a great blow to civilization if such concentrated effort by so many millions did not yield favorable results?

This is our introduction to a very few remarks on the new Tariff act which has been signed by the President of the United States since our last issue. We do not doubt that many millions of capital in this country have been less active during the special session of the Congress called in March to deal with the tariff. But the fact that business suddenly begins to improve is not due alone to any feature of the new law; the sudden renewal of activity only is coincident with other business features already pointed out in this article, encouraged slightly by the cessation of tariff “tinkering” at Washington.

In another department of THE INDIA RUBBER WORLD the relation of the new tariff, as compared with former schedules, to the rubber and allied industries, is dealt

with in some detail. We consider it our duty as purveyors of news to the rubber trade by common consent to print such information.

We wish to venture one concluding remark, however: The change of the color of the cover of this journal—say from blue to red—would as seriously affect the trade, one way or the other, as any change of tariff schedules that ever happened at the hands of the Congress at Washington. We hope, then, that the tariff will be forgotten soon, in the devotion of our rubber men to their usual business details.

N. B.—It is hard to ignore the opportunity to suggest how speedily the new tariff act was dealt with at Washington, as compared with proposed tariff changes or new revenue laws in some other countries.

THE BRITISH RUBBER FEVER.

O furor do plantio em Ceylão continuá na sua febre assoncional. (The plantation frenzy in Ceylon continues with growing intensity.)—*A Mando newspaper.*

THE American word “boom” accurately describes the activity of European—and especially British—investors in subscribing to the capital of planting companies in the Far East since rubber reached the unprecedented \$2 mark. THE INDIA RUBBER WORLD already has chronicled the payment of dividends of rubber planting companies, in figures as high as 80 per cent. With “consols” at only 2½ per cent., it is not surprising that company promoters should take advantage of the recent successes of some planting companies to part the British fool from his money with rubber as a lure. But every “boom” is followed by a “fizzle,” and it is to be feared that the latter term must be applied ere long to some of the recently floated undertakings in rubber planting.

THE INDIA RUBBER WORLD has a list of rubber culture companies registered in London during the month of July, which, while not complete, embraces twenty-four new corporations, with an aggregate nominal capitalization of £1,317,040 [= \$6,409,375]. Now this is a great deal of money, and there is reason to believe that a large part of it actually has been paid over. The new enterprises referred to are planned to do business in nine different countries and colonies; it appears immaterial to the investors where a new company proposes to operate, so long as rubber is mentioned in its prospectus. At the same time, so-called rubber planting companies have been brought out in several other European countries, and in Malaysia, Ceylon, and so on.

Now the large dividends of certain well-established rubber plantation companies in the Far East undoubtedly have been honestly earned. Most of the dividends reported up to date were declared and paid before the late extraordinary rise in the price of rubber; the latter, in fact, not only must be regarded as temporary, but it had nothing to do with the divi-

dends of 50 to 80 per cent. already referred to. But it is a mistake to suppose that, because certain plantations have been successful in producing rubber, every plantation—without regard to soil, altitude or sun exposure—will yield equally good results. There must be much land planted to rubber to-day which ultimately will be cleared off for another crop to which it is better adapted.

The chief reason for warning, however, relates to the question of profits. Take the Vallambrosa Rubber Co., Limited, for example. There is a company formed without the agency of the promoter. The owners of three plantations already in existence five years ago "pooled" their interests and formed a limited company, dividing among themselves a certain number of shares, and admitting a few personal friends, with a view to gaining a little needed additional working capital. The total share issue to date is £50,000 [= \$243,325]. The Vallambrosa company were able in their first year to market rubber, and during four years they have sold 694,078 pounds, for enough to return to the owners £95,000 in dividends, besides which they have the plantation. Being organized solely as a rubber planting company, all their energies have been devoted to this one object, and each year has shown progress in the direction of economy in the production of rubber, as well as an improvement in its quality.

A dividend of 80 per cent. sounds large; no doubt this year still larger dividends will be recorded. But it must be kept in mind that the only 80 per cent. company to date is practically a private company, capitalized by its actual owners on a conservative valuation of their properties before their yielding capacity was known or suspected. In other words, the "Vallambrosa" enterprise was capitalized practically at cost, by cautious Scotch business men dealing with their own property. How about the newest companies? Have the twenty-four July corporations, with an average capitalization of £54,877, any basic properties comparable with those which were at the bottom of the Vallambrosa enterprise? Some of them even have no rubber planted yet. Suppose that, some day, they should be equally successful in growing rubber, what assurance have the public—the owners of the new companies—of 80 per cent. dividends, or 10 per cent., or any dividends at all?

Account must be taken, in this connection, of the promoters—a class of gentlemen who do not appear to have figured in the Vallambrosa organization, but who must, wherever they do appear, be compensated before the public gets a sight of the profits. The Amazonian newspaper we quote is right in describing the English attitude toward rubber just now as a "fever." The same view evidently is taken by the London *Financial News*, which, while warmly commending rubber culture in general, says in a recent issue that

if rubber were to have a sharp fall, many of those who have been so eager to invest in planting companies "would madly rush into the market and sell their shares," without stopping to find out whether they were really worth holding.

THE DORMANT SYNTHETIC RUBBER GERM was sure to be started to life by the high price of rubber, but that it should break out in cold and conservative Boston almost passes belief. There it is, however, with all of its familiar symptoms—laboratory samples, resilient, elastic, plastic—company capitalized for millions—secrecy for fear the "trust" will gobble it—"no real rubber in it"—a profit of \$1,250 per ton—and, at last, a willingness to sell the secret "to let the other man have a chance." Just who is doing the fooling and who of the syndicate of respectable promoters who are fooled it is difficult to say. They certainly are showing rubber, but it is not synthetic. It is an extract from a resin carrying bastard gum, and a rather poor product at that.

THE NEW WASHING MACHINE.

TO THE EDITOR OF THE INDIA RUBBER WORLD: We much appreciate the article regarding our "Universal" washing machine, in your August issue (page 381), which will no doubt be very interesting to all concerned. However, we are sorry to see that you make mention that only a few of these machines have been sold, in view of the fact that we have now placed from 25 to 30, and seeing that they are able to treat so very much more material than the old type of washer this figure is most gratifying.

In the case of low-grade rubber the "Universal" will wash anything from 10 to 20 times the quantity in a given period, and therefore we think we are right in considering that we have sold the equivalent of 150 to 200 ordinary washers. We are keeping this latter figure low, as some of the machines have been sold for washing Pará and Pará kinds, and in such cases so large a saving in time is not shown, although the saving in labor and the superior quality of the washed rubber are very important points in favor of the machine.

WERNER, PFLEIDERER & PERKINS, LIMITED.

Petersborough, England, August 17, 1909.

ESCAPE FROM A SUNKEN "SUBMARINE."

NOT the least interesting feature of the daily news of the past month has been that relating to the experience of Ensign Kenneth Whiting, of the United States navy, in making his escape from a sunken "submarine" through a torpedo tube. The merit of his achievement is illustrated by the fact that these new engines of naval warfare are sometimes lost to control, and that the lives of those manning them are endangered. Ensign Whiting, in a boat not in danger, but which had been sunk to the bottom for the purpose of the experiment, made his exit through the torpedo tube to the surface in safety. If one man can do this, it is assumable that the members of the service generally can do the same, except that the last man in each boat may not be able to escape, for the reason that under existing conditions such a feat as that of Ensign Whiting would be possible only with the assistance of some one left behind to control the opening of the torpedo tube in some way to prevent the ingress of sea water. Naval authorities are now studying the possibility of modifying the construction of the submarines to an extent which will allow the last man on board to escape in case of disaster. But whether it is desirable for one man or the whole crew to escape, it is likely that some special costume for the purpose will be devised—more or less waterproof, and calling for the use of india-rubber.

India-Rubber and the New American Tariff.

THE President of the United States on August 5 attached his signature to the new Tariff bill on which the Congress had been at work in special session since March 15. This act will doubtless be identified by the name of Mr. Payne, who introduced it in its original shape in the House of Representatives on March 17. Its official title is—

AN ACT to provide revenue, equalize duties and encourage the industries of the United States and for other purposes.

The act as a whole cannot be reviewed here, dealing as it does with the duties on so many thousands of items, to say nothing of the administrative paragraphs, including provisions for a maximum and minimum tariff under certain conditions, prospective or contingent.

So far as the india-rubber trade is concerned, crude india-rubber and gutta-percha and waste rubber remain on the free list. Imports of rubber goods are dutiable under the new bill at 35 per cent. *ad valorem*, instead of 30 per cent., as heretofore. Rubber sponges, not before specified, come in at 40 per cent. Tires will now be rated as rubber goods and not as parts of automobiles. Imports of hard rubber and gutta-percha were dutiable already at 35 per cent., which rate has been maintained. Some other items more or less related to the industry will have attention in this article.

EXTRACTS FROM THE NEW LAW.

The paragraphs which follow are copied from the Payne tariff act, arranged in the numerical order of schedules and paragraphs. The idea has been to include in the quotations every mention of india-rubber in the tariff, whether of much or little importance.

SCHEDULE C.—METALS AND MANUFACTURES OF.

135. [Relating to wires]; telegraph, telephone and other wires and cables composed of metal and rubber, or of metal, rubber and other materials, 40 per cent. *ad valorem* [etc.].

[Under old law 45 per cent. on manufactures of copper—telegraph wires and cables not being specified.]

141. Automobiles, bicycles and motorcycles, and finished parts of any of the foregoing, not including tires, 45 per cent. *ad valorem*.

[Under old law 45 per cent. as manufactures of metal, automobiles not being specified.]

[NOTE.—The interest of this paragraph for the rubber trade is in that it removes from discussion whether rubber tires should be considered as parts of an automobile. Tires are thus placed among general rubber goods, the rate on which, under the new law, is 35 per cent. *ad valorem*.]

145. Card clothing not actually and permanently fitted to and attached to carding machines or to parts thereof at the time of importation, when manufactured with round iron or untempered round steel wire, 2 cents per square foot; when manufactured with tempered round steel wire, 45 cents per square foot; when manufactured with plated wire or other than round iron or steel wire, or with felt face, wool face or rubber face cloth containing wool, 55 cents per square foot.

[Under old law: "146. Card clothing manufactured from tempered steel wire, 45 cents per square foot; all other, 20 cents per square foot."]

154. Table [and other specified] knives, forks and steels, finished or unfinished; if imported with handles of - - - hard rubber, solid bone, celluloid or any pyroxyline material, 4 cents each; - - - and in addition, on all the above articles, 15 per cent. *ad valorem* [etc.].

[Under old law 5 cents per piece and 15 per cent.]

167. Rivets, studs and steel points, lathed, machined or brightened, and rivets or studs for non-skidding automobile tires, 45 per cent. *ad valorem* [etc.].

[Under old law 45 per cent., as unenumerated manufactures of steel.]

187. Penholder tips, penholders and parts thereof, 5 cents per gross and 25 per cent. *ad valorem*; gold pens, 25 per cent. *ad valorem*; fountain pens, stylographic pens, 30 per cent. *ad valorem*; combination penholders, comprising penholder, pencil, rubber eraser, automatic stamp or other attachment, 40 per cent. *ad valorem*. Provided, That pens and penholders shall be assessed for duty separately.

[Under the old law the nearest corresponding provision is: "187. Penholder tips, penholders or parts thereof, and gold pens, 25 per cent. *ad valorem*."]

SCHEDULE I.—COTTON MANUFACTURES.

330. Bone casings, garters, tire fabric or fabric suitable for use in pneumatic tires, suspenders and braces and tubing, any of the foregoing made of cotton or other vegetable fiber and india-rubber, or of which cotton or other vegetable fiber is the component material of chief value, and not embroidered by hand or machinery, 45 per cent. *ad valorem*; - - - belting for machinery made of cotton or other vegetable fiber and india-rubber, or of which cotton or other vegetable fiber is the component material of chief value, 30 per cent. *ad valorem*.

[Under old law, same rates.]

[NOTE.—Paragraph 324 reads: "Clothing, ready made, and articles of wearing apparel of every description, composed of cotton or other vegetable fiber, or of which cotton or other vegetable fiber is the component material of chief value, made up or manufactured, wholly or in part, by the tailor, seamstress, or manufacturer, and not otherwise provided for in this section, 50 per cent. *ad valorem*." This is practically the same as the terms of the old law, except that this clause from the former is omitted: "Provided, That any outside garment provided for in this paragraph having india-rubber as a component material should pay a duty of 15 cents a pound and 50 per cent. *ad valorem*." The revenue derived from imports under this last clause during the fiscal year 1906-07 was \$1,468.77.]

SCHEDULE J.—FLAX, HEMP AND JUTE, AND MANUFACTURES OF.

347. Linoleum, corticene and all other fabrics or coverings for floors, made in part of oil or any similar product, plain, stamped, painted or printed only, not specially provided for herein, if nine feet or under in width, 8 cents per square yard and 15 per cent. *ad valorem*; over nine feet in width, 12 cents per square yard and 15 per cent. *ad valorem*; and any of the foregoing of whatever width, the composition of which forms, designs or patterns, whether inlaid or otherwise, by whatever name known, and cork carpets, 20 cents per square yard and 20 per cent. *ad valorem*; mats for floors made of oilcloth, linoleum or corticene shall be subject to the same rate of duty herein provided for oilcloth, linoleum or corticene; oilcloth for floors, if nine feet or less in width, 6 cents per square yard and 15 per cent. *ad valorem*; over nine feet in width, 10 cents per square yard and 15 per cent. *ad valorem*; waterproof cloth, composed of cotton or other vegetable fiber, whether composed in part of india-rubber or otherwise, 10 cents per square yard and 20 per cent. *ad valorem*.

[Under old law: Oilcloths for floors, under twelve feet wide, 8 cents per square yard and 15 per cent. *ad valorem*; 12 feet wide and over, 12 cents per yard and 15 per cent. Linoleum, corticene, inlaid, and cork carpets, 20 cents per yard and 20 per cent. Waterproof cloth, 20 cents per yard and 20 per cent.]

349. Laces, - - - gorings, bands, bandings, belts, beltings, bindings, - - - webs and webbings, - - - composed wholly or in chief value of cotton, flax or other vegetable fiber and india-rubber, or of cotton, flax or other vegetable fiber, india-rubber and metal, and not elsewhere specially provided for in this section, 60 per cent. *ad valorem*.

[Under old law, 60 per cent. *ad valorem*.]

[NOTE.—The revenue from imports described in this paragraph during the year 1906-07 reached \$22,842,704.53, though of course india-rubber figured in such goods to a negligible degree.]

SCHEDULE K.—WOOL AND MANUFACTURES OF.

383. Webbings, gorings, suspenders, braces, bandings, beltings, bindings, braids, galloons, edgings, insertings, flouncings,

fringes, gimps, cords, cord and tassels, - - - made of wool, or of which wool is a composed material, whether containing india-rubber or not, 50 cents per pound and 60 per cent. *ad valorem*.

[Under old law 50 cents per pound and 60 per cent. *ad valorem*.]

SCHEDULE L.—SILK AND MANUFACTURES OF.

399. [Relates to velvets and the like, in great detail.] But in no case shall any goods made on Jacquard looms or any goods containing more than one color in the filling, including such as have india-rubber as a component material, pay a less rate of duty than 45 per cent. *ad valorem*.

[This provision does not appear in the old law.]

401. Ribbons, bindings, including hat bands, beltings, bindings, all of the foregoing not exceeding twelve inches in width, and if with fast edges, bone casings, braces, cords, cords and tassels, garters, gorings, suspenders, tubings, and webs and webbings, composed wholly or in chief value of silk, and whether composed in any part of india-rubber or otherwise, if not embroidered in any manner by hand or machinery, 50 per cent. *ad valorem*.

[Under old law 50 per cent. *ad valorem*.]

402. [This paragraph relates to practically the same class of goods as the preceding paragraph, when made up and embroidered, the rate being 60 per cent. *ad valorem*.]

[Under old law, 60 per cent. *ad valorem*.]

403. All manufactures of silk, or of which silk is the component material of chief value, including such as have india-rubber as a component material, not specially provided for in this section, 50 per cent. *ad valorem*: Provided, That all manufactures of silk enumerated under any paragraph of this schedule, if composed in any part of wool, shall be classified and assessed for duty as manufactures of wool.

[Under old law 50 per cent.]

SECTION N.—SUNDRIES.

463. Manufactures of bone, chips, grass, horn, quills, india-rubber, palm leaf, straw, weeds or whalebone, or of which these substances or any of them is the component material of chief value, not specially provided for in this section, 35 per cent. *ad valorem*; but the terms "grass" and "straw" shall be understood to mean these substances in the natural form and structure, and not the separated fiber thereof; sponges made of rubber, 40 per cent. *ad valorem*; combs composed wholly of horn, or composed of horn and metal, 50 per cent. *ad valorem*.

[Under old law, 30 per cent. *ad valorem*; rubber sponges not specified before.]

464. Manufactures of gutta-percha, ivory, vegetable ivory, mother-of-pearl and shell, plaster of paris, papier-mache and vulcanized india-rubber, known as "hard rubber," or of which these substances or any of them is the component material of chief value, not specially provided for in this section, and shells engraved, cut or ornamented, or otherwise manufactured, 35 per cent. *ad valorem*.

[Under old law 35 per cent. *ad valorem*.]

FREE LIST.

582. Gutta-percha, crude.

591. India-rubber, crude, and milk of, and scrap or refuse india-rubber, fit only for remanufacture and which has been worn out by use.

MATERIALS FOR MANUFACTURE.

It seems unnecessary to quote the language of the paragraphs relating to certain materials of the rubber manufacture, but only to give the rate of duty, compared with the rates under the old law:

	Old.	New.
Sulphuric acid	¾ cent pound	¾ cent pound
Linseed oil	20 cents gal.	15 cents gal.
Lampblack	25 per cent.	25 per cent.
Vermilion, containing quicksilver ...	10 cents pound	10 cents pound
Whiting and Paris White	¼ cent pound	¼ cent pound
Oxide of zinc, dry	1 cent pound	1 cent pound
Litharge	2¾ cents pound	2¾ cents pound
White lead	2¾ cents pound	2¾ cents pound
Sublimed or flowers of sulphur.....	\$8 ton	\$4 ton
Barytes	\$5.25 ton	\$5.25 ton

REVENUE DERIVED FROM THE RUBBER SCHEDULES.

The entries for consumption in the United States of foreign manufactures of india-rubber and gutta-percha, in the fiscal year 1907-08, and the duties collected thereon, were as follows:

Manufactures of—	Value.	Duties.
India-rubber	\$1,856,584.55	\$556,971.39
Hard rubber	293,417.25	102,695.72
Gutta-percha	41,299.00	14,454.65
Elasticon and other substitutes.....	29,994.00	5,998.80

Total \$2,221,294.80 \$680,120.56

It is not possible from any published customs statistics to analyze the imports to the extent of determining the value of goods listed in the cotton, woolen, linen, or silk schedules, and having india-rubber as a component part. Such details as are available, however, indicate that the volume is relatively not large. For example, the imports during a recent year, under the cotton schedule, of "Outside garments having rubber as a component material," amounted in value to only \$2,677 and the revenue derived was \$1,468.77.

NOTES.

Asbestos, unmanufactured, remains on the free list; also, cotton and cotton waste or flocks. Rubber toys are not specified, but the toy schedule is so framed that rubber toys cannot enter at a lower rate than 35 per cent., the rate for manufactures of india-rubber.

Chicle remains dutiable at 10 cents per pound.

HISTORY OF THE RUBBER TARIFF.

INDIA-RUBBER now having figured in the United States tariff schedules for nearly eighty years, it may be of interest to the trade to recall here the various revisions relating to crude rubber and manufactures thereof in successive revisions of the tariff law, leading up to that time which has come into effect during the past month. The details which follow have been compiled from official sources.

CRUDE INDIA-RUBBER.

India-rubber was specified in the United States tariff schedules for the first time in the Act of July 13, 1832, prior to which time any imports of this material (then only in a crude form) which may have come to the notice of collectors of customs would have been liable to a duty at 15 per cent. *ad valorem*—the old-time rate on "unenumerated articles."

In 1832 unmanufactured rubber was placed on the free list, where it continued until 1846, when a duty of 10 per cent. was imposed. Thereafter two classes of raw rubber were introduced into the schedules, the rates on which were as follows, through many successive revisions of the tariff:

India-rubber, crude and milk of.—Act of March 3, 1857, 4 per cent.; 1861 to 1862, free; 1862 to July 14, 1870, 10 per cent; from then until now, free.

India-rubber, raw or unmanufactured (bottles, slabs or sheets).—Act of March 3, 1857, 4 per cent.; 1861, free; 1861 (a later Act), to July 14, 1870, 10 per cent. This classification disappeared in the Act of the last date named, since which time all imports of raw rubber have been free.

SUMMARY.

1832-1846	Free	1861-1862	Mixed
1846-1857	10%	1862-1870	10%
1857-1861	4%	1870-	Free

CRUDE GUTTA-PERCHA.

The first imports of crude gutta-percha doubtless were considered at the custom houses as india-rubber, but in the Act of March 3, 1857, this material was specified by name, since which time the terms of admission of gutta-percha have been identical with those for india-rubber. The customs returns, in fact, lumped both under one head until 1891, when the government, at the instance of THE INDIA RUBBER WORLD, first began to require statistics to be kept separately in regard to the two materials.

MANUFACTURES OF INDIA-RUBBER.

India-rubber goods were first specified by the tariff makers in the Act of August 30, 1842, prior to which any imported would have been dutiable as "unenumerated articles," the rate on which varied with different revisions of the tariff. The designation was "India-rubber, manufactures wholly or in part of," and the rate of 30 per cent. The rate was changed several times under the twenty-three acts amendatory of the tariff which preceded the Act of June 22, 1874, under which the tariff schedules were embraced in the "Revised Statutes of the United States." This did not make the schedules permanent, however, and six revisions were made in about as many years. The subsequent general tariff Acts have been those of 1883, 1890 (the McKinley bill), 1894 (the Wilson bill), 1897 (the Dingley bill), and 1909 (the Payne bill). It is hardly necessary to mention the rate on rubber goods under each Act. The trend of the charges appear in this

SUMMARY.

1842-1857	30%	1883-1894	30%
1857-1861	24%	1894-1897	25%
1861-1872	25%	1897-1909	30%
1872-1874	18%	1909-	35%
1874-1883	25%		

There was a tendency at one time to introduce a classification of rubber goods in the schedules. Rubber boots and shoes, for example, figured sometimes at a different rate from rubber manufactures in general, as follows:

Under the Acts of 1861, 30%; other rubber goods, 20%. Under the Revised Statutes (1874), 30%; other goods, 25%. Under the Act of 1883, 25%; other goods, 30%.

Beginning with the Act of 1846 there have been special rates for elastic fabrics and other like goods, which will be dealt with in another part of this article.

The "McKinley bill" (1890) contained this paragraph, the general form of which has been retained in the law until now:

460. Manufactures of bone, chip, grass, horn, india-rubber, palm-leaf, straw, weeds, or whale-bone, or of which these substances or either of them is the component material of chief value, not specially provided for in this act, 30 per cent. *ad valorem*.

The same wording appears in the latest Act, except that the word "quills" is added after "horn," but the rate has been raised to 35 per cent.

Hard rubber manufactures were also specifically mentioned in the tariff schedules for the first time in the revision made by McKinley, in 1890 (Paragraph 461), the rate being fixed at 35 per cent., the same as on manufactures of gutta-percha. The McKinley phraseology has been retained, practically, and the rate has been unchanged, except under the Wilson bill (1894-97), when it was 30 per cent.

MANUFACTURES OF GUTTA-PERCHA.

While crude gutta-percha was mentioned in the tariff five years

earlier, manufactures of gutta-percha were not specified before the Act of July 14, 1862, in which a duty of 30 per cent. was imposed. Since that time the rate has been almost uniformly higher than on india-rubber goods, until the passage of the new Act, under which the rate is the same for both classes of goods.

SUMMARY.

1862-1864	30%	1883-1890	30%
1864-1872	40%	1890-1894	35%
1872-1874	36%	1894-1897	30%
1874-1883	40%	1897-	35%

RECLAIMED RUBBER.

The reclaiming of rubber from waste having been developed in the United States earlier than elsewhere, the importation of such material from Europe is of recent origin. The status of such importations, as "a non-enumerated manufactured article," is set forth in THE INDIA RUBBER WORLD, June 1, 1909 (page 309). During the recent special of the Congress it was proposed to amend the Payne bill in one paragraph as follows:

Manufactures of - - - india-rubber, INCLUDING RECLAIMED RUBBER not specially provided for in this section, 35 per cent. *ad valorem*; [etc.].

At the same time influences were at work in Washington to have reclaimed rubber placed upon the free list, and the net result was to leave the situation unchanged as to reclaimed rubber. Any importations of such material in future will be subject to the provision—

480. That there shall be levied, collected, and paid on the importation of all raw or unmanufactured articles, not enumerated or provided for in this section, a duty of 10 per cent. *ad valorem*, and on all articles manufactured in whole or in part, not provided for in this section, a duty of 20 per cent. *ad valorem*.

And under "Treasury Decisions" No. 29,731 the treasury department "is of the opinion that the merchandise [described as "certain reclaimed or recovered rubber from old scrap, boots and shoes and automobile tires"] is a non-enumerated article, and you [collectors] are accordingly directed to classify future importations thereof - - - at the rate of 20 per cent. *ad valorem*."

WASTE RUBBER.

The first reference to waste rubber in the official data from which this data is compiled appears in a summary prepared by order of the United States Senate in 1890, in which it is stated that the rate of 25 per cent. on imports of "India-rubber boots and shoes" was applicable to such articles, even if "old and fit only for remanufacture." No record is available of such imports at that time, or the application of this rate. But the McKinley bill, passed in that year, embraced this item in the free list:

613. India-rubber, crude and milk of, and old scrap or refuse india-rubber which has been worn out by use and it fit only for remanufacture.

The Payne bill, as originally reported, contained this item:

587. India-rubber, crude, and milk of, and scrap or refuse india-rubber, fit only for remanufacture, and not ground or otherwise reduced in size.

As reported to the Senate by Mr. Aldrich the paragraph read:

587. India-rubber, crude, and milk of, and scrap and refuse india-rubber, fit only for remanufacture.

After all the permutations of the tariff bill, in the final form, the reference to scrap rubber is the same as in the Act of 1890. The interest in the proposed changes lay in the fact that latterly not a little imported waste rubber has been held to be dutiable, on the ground that it is not material "which has been worn out

IMPORTS ENTERED FOR CONSUMPTION IN THE UNITED STATES, UNDER THE HEADING "MANUFACTURES OF INDIA-RUBBER AND GUTTA-PERCHA AND SUBSTITUTES FOR," DURING SIX YEARS, THE FIGURES FIRST GIVEN FOR EACH YEAR REPRESENT IMPORT VALUES AND THE FIGURES IN PARENTHESES THE AMOUNT OF DUTIES COLLECTED.

[The heading "Elasticon and similar substitutes for india-rubber" has long been in vogue in the customs service; the rate of duty is 20 per cent. *ad valorem*—that applicable to "unenumerated articles of manufacture."]]

IMPORTS.	1902-03.	1903-04.	1904-05.	1905-06.	1906-07.	1907-08.
India-rubber	\$493,537 (\$148,061)	\$591,027 (\$177,282)	\$1,021,743 (\$306,523)	\$1,749,209 (\$524,740)	\$1,851,423 (\$555,427)	\$1,856,585 (\$556,071)
Hard rubber	117,191 (41,017)	146,272 (51,195)	175,396 (61,388)	195,102 (68,115)	177,319 (61,971)	293,417 (102,696)
Gutta-percha	124,798 (43,679)	141,555 (49,544)	117,421 (41,098)	114,802 (40,181)	175,923 (61,573)	41,299 (14,455)
"Elasticon," etc.	46,994 (9,399)	38,533 (7,707)	44,619 (8,924)	56,046 (11,209)	60,596 (12,119)	29,994 (5,999)
Total	\$782,520 (\$242,156)	\$917,387 (\$285,728)	\$1,359,179 (\$417,933)	\$2,115,179 (\$644,245)	\$2,265,261 (\$691,090)	\$2,239,793 (\$680,121)
Average <i>ad val.</i> duty	30.95%	31.15%	30.75%	30.46%	30.51%	30.37%

by use." Such is the unvulcanized scrap which accumulates in every factory producing goods of rubber and fabrics combined. Such scrap has been admitted at 10 per cent. under an omnibus clause of the Tariff law relative to manufactured articles not enumerated, and this condition is not changed by the new law.

SULPHUR AND THE TARIFF.

THE rate of duty on sulphur, other than crude, in the new Tariff law enacted at Washington is reduced from \$8 to \$4 per ton. Crude sulphur is continued on the free list. The interest to the india-rubber industry is not great, since the importations of refined or "flowers of sulphur" have been very small of late, as compared with crude. The references to sulphur in the new law follow:

DUTIABLE.

81. Sulphur, refined or sublimed, or flowers of, \$4 per ton.

[Old law: \$8 per ton.]

ON THE FREE LIST.

686. Sulphur, lac or precipitated, and sulphur or brimstone, crude in bulk, sulphur ore as pyrites, or sulphuret of iron in its natural state, containing in excess of 25 per cent. of sulphur, and sulphur not otherwise provided for in this section.

[Old law (Paragraph 674): The same.]

Importations of dutiable sulphur into the United States have been as follows:

	1904-05.	1905-06.	1906-07.	1907-08.
Refined	\$5,937	\$23,722	\$18,080	\$15,805
Flowers of	23,209	15,493	41,501	40,346

The importations for consumption of lac, or precipitated, and crude sulphur, or brimstone (all free), have been:

	1904-05.	1905-06.	1906-07.	1907-08.
Precipitated	\$4,754	\$2,997	\$5,464	\$5,783
Crude (or ore)	1,685,662	1,597,562	638,856	428,983

From these figures it will be seen that the india-rubber trade, though large users of sulphur, have little reason to be interested in the new tariff schedules so far as sulphur is concerned. It might, however, have had reason to be concerned very much more had certain suggestions made to the tariff revisers been adopted. As *Oil, Paint and Drug Reporter* (New York, April 19) pointed out, while the tariff act was pending, if what is now Paragraph 81 had been enacted in the form at one time approved by the Senate committee, no imports of sulphur, in whatever form, would be allowed without being subject to a duty of \$6 per ton. This would have given an absolute monopoly to the American producers, who within a few years have increased their operations to a very important extent.

As is well known, the production of sulphur in Sicily, formerly the chief source of the world's supply, is protected by the government of Italy. As *Oil, Paint and Drug Reporter* says, the government "has created and maintains a monopoly at the expense of heavy financial obligations, not for the sake of any benefit accruing to the country or to conserve its natural resources, but to provide employment for a large army of men whose families would be rendered destitute in event of the closing of the mines or of the adoption of a more economic mode of mining. Under circumstances such as these the difficulties of meeting competition and of conducting an industrial enterprise of great magnitude in a successful way must be well nigh unsurmountable."

Meanwhile the production of sulphur elsewhere than in Sicily has been greatly increased, notably in the United States. In the Louisiana mines, which represent over 90 per cent. of the total American output, the sulphur is melted in the ground by an injection of superheated steam and is pumped to the surface in the liquid, where it crystallizes as it cools. In this form it is known as crude sulphur, though it has been purged of extraneous matter and purified to a certain extent in the process of melt-

ing. Sicily sulphur, on the other hand, is dug in a rough state from the earth and is afterwards melted, so as to separate the rock, dirt and other waste matter in which it is imbedded. This process of cleansing, however, does not advance it in value over the crude Louisiana sulphur. In fact, as to purity, there is no choice between the two.

Our New York contemporary says: "The American [sulphur] industry, which was an infant five or six years ago, has within that time grown to a manhood of lusty proportions, that fed by new and vastly superior methods of mining and nourished by able and energetic management, it has thrived without assistance of government, and in spite of certain ill-judged efforts on the part of State authorities to cripple it. It has even gone so far as to carry the war into Africa and to invade the European markets. The imports of brimstone have fallen from 181,130 tons in 1903 to 25,740 tons in 1908."

The same writer asks, then, why the government should consider it necessary to accord this industry a high measure of protection. But as will be seen from what precedes these paragraphs, crude sulphur continues to be admitted free, while flowers of sulphur are dutiable at only one-half the former rate.

* * *

WHILE the tariff bill was pending a correspondent wrote:

TO THE EDITOR OF THE INDIA RUBBER WORLD: As you probably know, the Union Sulphur Co. of Louisiana produces about all the sulphur made in the United States, and they work under the patents of Herman Frasch, who first invented the process of removing sulphur from Western petroleum, which the Standard Oil Co. used with great success. [See THE INDIA RUBBER WORLD, September 1, 1906—page 381.] He persuaded these same friends to spend a large amount of money on his process, and now it is possible to produce sulphur at about one-fourth its selling price, so that any protection is unnecessary. H. O. C.

RUBBER IN MILKING MACHINES.

AN inquiry comes from Sweden in regard to obtaining rubber of extra soft quality for use in milking machines. It is stated: "The grade usually obtainable in Sweden is too hard, and as used to embrace the cows' nipples it causes pain." This correspondence was referred to a prominent firm manufacturing "milkers," who write to THE INDIA RUBBER WORLD:

"The rubber used in connection with these machines is made of a special composition, so that it will impart no odor to the milk, and at the same time be least affected by the fat in the milk. As you can understand, we have spent a great deal of time and money in order to obtain the proper compound, and we feel that this is a justifiable trade secret."

There appears to be a constant increase in the use of milking machines, on which THE INDIA RUBBER WORLD published an article September 1, 1907. A single firm states that their machines are used for milking 35,000 cows in the United States and Canada and about 25,000 in Australia and New Zealand. A considerable amount of rubber is required for these machines, both for the teat cups and tubing to connect the machines with the receiving cans. The latter are provided also with rubber gaskets to render the covers milktight.

Many inventors have busied themselves in the development of machines for milking cows, a single firm now controlling 25 patents in this field, with other patents pending.

G. VAN DEN KERCKHOVE, of Brussels, who is the inventor of several types of apparatus for rubber extraction and coagulation, has designed a stump-pulling outfit for use in clearing lands for rubber plantations. He constantly advises rubber planters to carefully take up all the roots of trees cut down, as the old roots rot underground, and he regards this one of the principal causes of fungus being propagated.

Rubber Planting in Dutch Guiana.

THE fact that the government of Dutch Guiana, in South America, is now planting 500 acres of *Hevea* rubber draws attention to the possibilities of that country for the same sort of development that has taken place in the Far East. There are at present in that colony many going plantations that are producing cacao and sugar, where the land has been dyked and drained, and upon which there are now substantial plantation buildings. The partial failure of the cacao crop, and the far greater profit in rubber, has turned the attention of the planters to the latter. The movement seems to be in favor of a joint planting of bananas and rubber, there being a good market for bananas from that region, now that the United Fruit Co. have established a regular weekly service between Paramaribo and New York. That the *Hevea Brasiliensis* will do well is proved by a number of experimental plantings that already exist. These plantations are about a dozen in number. The oldest, containing some 300 trees ten years old, recently yielded about 3 pounds per tree. The most ambitious rubber plantation is the youngest and contains 14,000 *Hevea* trees from 1 to 1½ years old.

With a stable government, freedom from unjust taxation, and a climate and soil fitted for such cultivation it would seem likely that there would be considerable done in rubber in the next five years. Added to all this is the assistance of the government in providing British coolie labor under the indenture system, at

only a nominal cost to the planter, from which it would seem that *Hevea* rubber cannot only be grown as well in Dutch Guiana, but as cheaply as in the Far East. There is but one point that remains unsettled, when one considers all of the factors that go to make up a successful *Hevea* plantation in the country under consideration, and that is rainfall. In Surinam, according to Dutch government reports, it averages about 90 inches, well distributed through the twelve months. This certainly is not excessive, but is it enough?

The table which follows gives the details of the experimental tapping of 10 ten-year-old *Hevea* trees on the Waterland plantation, in Dutch Guiana:

EXPERIMENTAL RUBBER TAPPING IN DUTCH GUIANA.

TREES.	Method.	Times Tapped.	Dry Rubber.	Scraps.	Total.
No. 1.....	herring bone	116	1,184 gr.	253 gr.	1,437 gr.
No. 2.....	do	115	1,141 gr.	253 gr.	1,394 gr.
No. 3.....	do	104	624 gr.	253 gr.	877 gr.
No. 4.....	do	113	1,160 gr.	253 gr.	1,413 gr.
No. 5.....	half spiral	106	586 gr.	253 gr.	839 gr.
No. 6.....	do	105	779 gr.	253 gr.	1,032 gr.
No. 7.....	do	45	624 gr.	253 gr.	877 gr.
No. 8.....	do	107	1,145 gr.	253 gr.	1,398 gr.
No. 9.....	spiral	56	577 gr.	253 gr.	830 gr.
No. 10.....	V shaped	70	501 gr.	253 gr.	754 gr.

Total production..... 8,321 gr. 2,530 gr. 10,851 gr.

NOTE.—It is evident the weights given for scrap are arrived at by taking the whole yield of this grade as one mass and dividing it by the number of trees tapped.



RUBBER PLANTING IN DUTCH GUIANA.
[Three-year-old *Hevea Brasiliensis*.]



RUBBER PLANTING IN DUTCH GUIANA.
[Six-year-old *Hevea Brasiliensis*.]

CEARA RUBBER IN CEYLON.

It seems to be the general belief that all the Ceará rubber (*Manihot*) planting in the East were failures, and that none of it now remains, having been supplanted by *Hevea*. That is not the case exactly. Much of the early planting of the Ceará was a disappointment, and many of the planters cut down their trees and went in for *Hevea* because of its surer and greater productiveness. That there are mature Ceará trees that are regular and profitable producers is the fact. The illustrations shown herewith make this plain. The tree shown in one is on the Warringalla estate, Ceylon, while in the other is shown the process of making biscuits on the Pallekelle estate, Ceylon. From the last named estate there have been shipped as much as 4,000 pounds of dry rubber in one year.

MEXICAN MUTUAL PLANTERS' CO.

At the eleventh annual meeting of shareholders (Chicago, June 9) the death was announced of Mr. George C. Sanborn, one of the founders of the company, and its president from the beginning. [See THE INDIA RUBBER WORLD, Aug. 1, 1909—page 403.] The directors were re-elected, with the addition of J. W. Stapleton, to fill the vacancy caused by the death of Mr. Sanborn. Frank B. Stone, a wholesale hardwood lumber merchant, of Chicago, a director from the beginning, and latterly vice-president, was elected president. The other officers elected were: Edward H. Stearn, vice-president; C. B. Woodruff, secretary, and Joseph Cummins, treasurer. It was the sense of the meeting that a committee of the directors should pay an early visit to the company's rubber plantation, "La Junta," in Vera Cruz, Mexico, and make a report on the same to the investors.

MUTUAL RUBBER PRODUCTION CO. NO. 1.

BULLETIN No. 31, issued to the investors in this company from the main offices in Boston, contains in full the report of the fifth annual inspector, Elbert C. Kinney. He visited the plantations in Mexico in February last, and recorded in detail the extent of the development work, together with the growth of the planted trees of different ages. Photographs are given of the growing trees and the of the principal buildings on the estate, which are near Frontera, in the state of Tabasco. He states that he saw 315 seven-year-old trees tapped for the first time, yielding at one tapping an average of 13½ ounces of washed sheet rubber; 195 other trees were then tapped with more care, yielding 2 ounces on an average. It is believed that the trees will stand being tapped three times a year. The company has nearly 4,000 acres under *Castilleja* rubber.



CEARA RUBBER IN CEYLON.

[Making biscuits on Pallekelle estate, Dumbura district.]

RUBBER CONTRACT SALES.

THE Selensing Rubber Co., Limited, in February contracted for the sale of their 1909 output of fine rubber, Colombo delivery, at 3.70 rupees [= \$1.20, gold] per pound, estimated to reach 20,000 pounds. In June their 1910 output, estimated at 30,000 pounds, was sold on the same terms.

Beverlac (Selangor) Rubber Co., Limited, are reported to have sold their best grades of rubber for delivery between February 1, 1910, and January 31, 1911, at 3.80 rupees [= \$1.34.39] per pound.

The *Times of Malaya* (June 8) reports: "A large rubber estate in Klang has foreclosed the whole of its crop for the next three years at 5s. 11d. [= \$1.43.9] per pound."

AN ITEM FROM "DARKEST AFRICA."

A FORESTRY officer in the Eastern province of Northern Nigeria (British West Africa) says in an official report that the progressive Opobo chiefs, in particular, have purchased thousands of *Hevea* rubber plants, specially nursed in boxes, to stock their plantations.

DISTANCE OF PLANTING RUBBER.

THE Bukit Rajah Rubber Co., Limited, who have 2,340 acres under rubber planted at various distances, and who produced last year 210,081 pounds of rubber, report that the best results have been gained from trees a distance of 27 x 27 feet, and they are now thinning out some of the rubber more closely planted. In the crowded fields the bark does not renew so thickly or the trees yield so much latex as in the widely planted fields. On their Sundei Binjai fields, with the wide planting, the trees yielded 4 pounds each, or 300 pounds to the acre.



CEARA RUBBER IN CEYLON.

[Twenty-year-old *Manihot* tree on Warringalla estate, South Matala.]

Rubber Selling on the Amazon.

TO THE EDITOR OF THE INDIA RUBBER WORLD: Why is it that manufacturers of rubber goods—the consumers of the raw material—are obliged to buy their supplies from less than half a dozen dealers? It seems to me that herein is the secret of the recent high prices of rubber, and of fluctuations in rubber prices generally.

New York, August 19, 1909.

A MANUFACTURER.

THIS is a very timely, as well as a very pointed question. It shall have careful attention. The first suggestion that comes to mind, however, is to propose another inquiry:

Are rubber manufacturers obliged to buy their supplies from only a few firms?

In the years when THE INDIA RUBBER WORLD was getting a start a very important volume of business in crude rubber between Pará and New York was done without the intervention of middlemen. For example, the late Hon. Elisha S. Converse and the late Joseph Banigan, sharp competitors as they were in selling their products, carried on their buying of Pará rubber through the same channel. In other words, they bought in Pará and received direct shipments. And to-day the United States Rubber Co., while they may buy rubber in any market which may prove attractive for the time being, are proceeding upon the theory of buying as near the source as possible. They have their own buyers, for example, at Pará and Manáos, just as any individual or firm on the earth may do.

Rubber is freely offered for sale at Pará—as freely as postage stamps at any post office. The people who own the rubber are looking for buyers. They can't eat it; they can't wear it in the crude state; it has no ornamental use; they want to sell it as quickly as possible after it comes into their hands. In the ordinary course of events rubber comes down the Amazon, from hundreds and thousands of *seringaes*—by steamer or launch or canoe—in lots of pounds or hundredweights or tons, consigned to hundreds of merchants who, in some way or other, have made advances to the producers of the rubber. The producer may come down stream himself, with his year's "crop;" but in any event the rubber is most likely to come into the possession of the general merchants who for a year have provisioned the rubber camps, and as soon as the rubber arrives these merchants hasten to realize on it, for have they not bills to meet for goods bought in Europe? The system will appear simple to the reader who can recall the era when cotton planters in the southern United States drew upon their factor for all supplies needed during a year, and shipped the cotton crop to that factor when it was gathered.

In a single week rubber may come down the Amazon to more than a hundred merchants. Does any one wish to buy? Will some one kindly buy? *Please buy!* The merchants are more than anxious to sell. What do they care about who buys? A manufacturer's money would look as good to them as any other money. While it is true that the consignee of rubber at Pará realizes as promptly as possible on his receipts, even if the producer upriver should be left in debt to the merchant, still it is natural that he should look for the best prices possible. And here comes in the first element of competition. A, B and C, in New York, or C, D and E, in Europe, all want rubber, and as they bid over one another prices may go up. Or, if the demand from manufacturers be less pressing, their lack of zest in buying may cause Pará prices to sag.

But every man, woman, and child in America, or Europe, or elsewhere, who has cash or bank credits, can, every day in the year, buy rubber as freely, in Pará or Manáos, as one may obtain papers from a New York newsboy.

An element in the case to be considered, however, is that the maintenance of a capable buyer in the prime markets, with sufficient capital to give one a standing in the trade, costs money.

It is only natural, therefore, that consumers of rubber have preferred to buy rubber from houses at their doors, conducted by merchants who have familiarized themselves with the whole situation, risked much capital, and in the end have almost monopolized the importation of rubber.

There are indications, however, of changing conditions in the trade. Hundreds and thousands of rubber producers in the Amazon interior are asking themselves why they—or their consignees—are compelled to sell their rubber to "less than half a dozen dealers." It has been because our correspondent, and other manufacturers like him, have not cared to maintain buying houses on the Amazon. The new condition to be noted is the consolidation of rubber producing interests on a better financial basis than formerly, rendering the producer less dependent upon the buyer and the price of the moment. Likewise the producer is becoming able to meet the consumer at least half way in any system which may be organized for bringing the *seringa* and the rubber factory nearer together, instead of the manufacturer being obliged to do all the work, and assume all the risk, as in the past.

The Amazon is ready to-day to sell rubber in New York or in Liverpool, from "first hands," as freely as in Pará or Manáos.

ALVES BRAGA COMPANY.

THE ALVES BRAGA Rubber Estates and Trading Co., Limited, was registered in London, January 30, 1909, with an authorized capital of £240,000 in 6 per cent. (cumulative) preferred shares and £200,000 in ordinary shares—total, £440,000 [= \$2,141,260]. The domicile of the company is in Liverpool. The objects are to enter into partnership with the firm of Alves Braga & Co., of Pará, Brazil, and to adopt certain agreements between this firm with merchants in Liverpool and elsewhere; to carry on the business of rubber growers, gatherers, manufacturers, brokers, dealers, and merchants, at Pará and elsewhere; to acquire landed properties in Brazil and elsewhere; to acquire and operate ships or boats; to lend moneys and guarantee the fulfillment of contracts; and in general to engage in any forms of business necessary to the carrying out of these objects. The president of Brazil on March 18, 1909, signed decree No. 7363, authorizing this company to operate in that republic.

The first directors are José Simão da Costa, actuary, of Pará, and Eduardo Augusto da Costa, merchant, of Liverpool, with the last named the first managing director. The management in Liverpool may appoint directors resident in Brazil for the management of the company's business there. The first secretary is Richard Clegg Harrison.

The house of Alves Braga & Co. is among the most important in Pará, having been established for more than 20 years. The original style was Martius, Pinto & Alves, and their business that of importers. The house has always enjoyed an extensive credit, even during periods of financial crisis. The head is Antonio Rodrigues Alves, a Portuguese by birth and Brazilian by adoption. It has been for some years one of the leading *aviador* houses of Pará—i. e., consignees for rubber and other produce from up the Amazon. Their business is now done exclusively with the Acre territory, where they now possess large *seringaes* (rubber estates), with which communication is maintained by means of their own boats. Mr. Antonio Rodrigues Braga will be one of the directors on the Amazon of the new English company.

The annual rubber "crops" of Alves Braga & Co., during seven years past have aggregated the following quantities:

1902-03.....	361,062 kilos	[= 794,336 pounds]
1903-04.....	349,348 kilos	[= 768,566 pounds]
1904-05.....	474,084 kilos	[= 1,042,985 pounds]

1905-06.....	351,626 kilos	[= 1,213,577 pounds].
1906-07.....	433,648 kilos	[= 954,026 pounds].
1907-08.....	459,192 kilos	[= 1,010,222 pounds].
1908-09.....	492,763 kilos	[= 1,084,079 pounds].

Average, seven years.....445,960 kilos [= 981,112 pounds].

The productive capacity of the company's *seringaes* is much larger than these figures indicate, and their intention, now that their capital has been increased, is to open many more *estradas*. In THE INDIA RUBBER WORLD of July 1, 1909, appeared photographic views of important *seringaes* in the Amazon region. Similar views appear in the "Album do Rio Acre" of three large *seringaes* and three river steamers owned and operated by Alves Braga & Co., and besides they own many more. The *seringaes* are:

"Panorama," on the left bank of the upper Acre; area, 98,106,800 square meters [= 24,243 acres]; annual production, 25 to 30 tons. Manager, Adolpho Barbosa Leite.

"Nova Empresa," on the left bank of the Acre; annual production, 40 tons. Manager, Colonel Hypolito Moreira.

"Esmeralda," at the confluence of the river Xapury with the Acre.

"Recreio" (adjoining and not photographed), on the left bank of the Xapury; area, 2,598,550 square meters [= 642 acres].

The steamers are the *Amazonense*, 250 tons; *Amazonas*, 190 tons; *Prompto*, 120 tons.

AN AMAZON RUBBER SYNDICATE.

UNDER the name "A Productora Amazonica" has been formed at Pará a syndicate of "professional rural producers" of the Amazon Valley, under the provision of the decree of the Federal government of Brazil, No. 979, January 6, 1903. [See THE INDIA RUBBER WORLD, January 1, 1909—page 154.] The present syndicate is concerned with india-rubber. As stated in the by-laws:

The syndicate will endeavor to help its members by furnishing the means that they may need, either with the funds of the association, or with those resulting from the financial operations that it may realize, not placing the borrowers in any other obligation than the payment of interest.

To be a member of this rubber syndicate "it is necessary to be a proprietor, or to assist directly or regularly with the necessary elements for the promotion of the business." In other words one must be the owner of the *seringal* (rubber camp) or an *aziador* (a supplier of goods), as set forth in THE INDIA RUBBER WORLD, July 1, 1909 (page 347).

The syndicate will be managed by a board of its members, serving gratuitously, elected at a general meeting, which board may appoint a manager and a treasurer, each with a salary. By the way, the voting power of each member of the syndicate will be proportional to the previous annual production of rubber. But the details of the by-laws of A Productora Amazonica, verified at Pará, July 15, 1909, are of less importance than the general objects of the association, which may be stated as follows:

Producers of rubber in Brazil may, by compliance with certain laws, export their product at a lower rate than is exacted under the general rule. But it must first be established to the satisfaction of the authorities that (1) the rubber in question has actually been produced by the parties holding it; (2) that it is being exported directly by them to foreign buyers; and (3) that those dealing with the rubber are solvent and responsible parties. In order that the latter consideration may obtain the government requires the coöperation of a number of producers (not less than seven); hence the idea or requirement of a syndicate.

The advantage to exporters direct (who are actual producers of rubber) under an act of the Pará legislature is indicated by the following table, showing the rate of export duties required in that state:

Up to 5,246 milreis per kilogram.....	22 per cent.
From 5,250 to 5,500 milreis per kilogram.....	21 per cent.
From 5,501 to 5,800 milreis per kilogram.....	20 per cent.
From 5,801 to 6,100 milreis per kilogram.....	19 per cent.
Over 6,100 milreis per kilogram.....	18 per cent.

It will be seen here that the intent of the law, in part, is to encourage conditions which will keep up prices of rubber, since the higher the price, the greater will be the reduction of export duties. But this, of course, will be regulated by the conditions in consuming markets. By the way, 5,246 milreis, mentioned in the table, are equivalent, with exchange at 15 pence per milreis, to \$1.58, and 6,100 milreis to \$1.824.

It is understood that the firms named below, among others, have subscribed to the articles of A Productora Amazonica. Opposite each name is placed the amount of rubber the firm has produced (1) on an average during six crop years prior to 1908-9; and (2) during 1908-9—all figures indicating kilograms [1 kilograms = 2.2 pounds]. It must be stated, further, that this relates to up-river rubber alone, besides which some firms have produced Islands rubber.

FIRM.	Av. 6 Years.	1908-09.
R. Suarez & Co.....	663,138	1,301,697
Mello & Co.....	997,245	927,907
Barbosa & Tocantins.....	319,793	764,668
Alves Braga & Co.....	438,160	492,763
Rocha Silve & Co.....	176,782	369,398
Cerqueira Lima & Co.....	340,319	219,042
Pina Fernandes & Co.....	287,466	209,032
La Rocque, Mello & Co.....	67,548	143,441
Antonio Cruz & Co.....	408,925	123,864
Armando R. da Fonseca.....	222,039	101,454
Velhote Silva & Co.....	192,937	83,003

Total 4,114,352 4,736,269

The new syndicate has organized with Baron de Souza Lages as president; Antonio Rodrigues Alves vice-president; Wanddyck Amanajós Tocantins and João da Rocha Fernandez secretaries. They will serve until July next.

SUAREZ INCORPORATED.

THE long anticipated conversion of the rubber business of Suarez, on the upper Madeira, in Bolivia, into a corporation is at last a reality. A sketch and portrait of "Nicolas Suarez, a South American Rubber Baron," appeared in THE INDIA RUBBER WORLD April 1, 1905 (page 223), with an account of the development of the great crude rubber business under his control. Taking his brothers into partnership one by one, his firm prospered; they opened their own houses in Manãos, Pará and London, and sold direct. Their operations last year covered 1,302 tons of the 38,065 tons arriving at Pará, or 3.4 per cent. There is no invidious distinction in stating here that the Suarez rubber long has been known to manufacturers as absolutely the best "Pará rubber" produced, and hence realizing the highest prices paid for the output from the Amazon.

Nicholas Suarez is no longer a young man, and he is now the sole surviving brother, so it is not surprising that he has consented to turn over his business to a corporation. The business has been carried on under the names—

Suarez Hermanos [Suarez Brothers], in Bolivia.
R. Suarez & Co., on the Amazon.
Suarez Hermanos & Co., in London.

The new company is Suarez, Hermanos & Co., Limited, registered in London August 5, 1909, with £750,000 [= \$3,649,875] capital. The first directors are Nicholas Suarez and his nephew, P. Suarez, a son of the late R. Suarez. The latter was consul general for Bolivia in London, to which position P. Suarez has succeeded. The offices of the new company are at 12, Fenchurch street, London. The company will succeed to the interest of the Suarez firm in A Productora Amazonica, mentioned elsewhere in this paper.

THE London Daily Express recently sent circulars to a number of British manufacturers, inviting an expression of their sympathies as between protection and free trade. The leading rubber manufacturers were included, but the responses from this trade were not numerous, and the firms responding, for the most part, did not care to be quoted over their names.

The Dark African Rubber Prospect.

DECLINE OF THE "ABIR" COMPANY.

IN the palmy days of rubber trading profits in the Congo the ABIR company (Abir, Société à responsabilité limitée—originally the Anglo-Belgian India-Rubber and Exploration Co., of Brussels) was conspicuous for the size of its dividends and the quotations on its shares on the Belgian *bourses*—to say nothing of the speculation in its shares. To quote from THE INDIA RUBBER WORLD, December 1, 1901 (page 84):

The profits of the Société ABIR, based chiefly on rubber, but also to some extent on ivory, have been, for these recent years:

For 1898	2,482,697 francs = 248 per cent.
For 1899	2,768,042 francs = 277 per cent.
For 1900	4,873,356 francs = 487 per cent.

At the beginning of 1898 shares in ABIR were quoted at 14,500 francs, or 29 times the nominal value; at the beginning of 1900 the quotation was 17,600 francs, or 35 for one; by September, 1900, the figure rose to 28,925, or practically 60 for one; at the beginning of this year the rate was 25,075, or 50 for one.

The most recent quotation for ABIR shares on the Antwerp *bourse* available at this writing was 2,187½ francs, or a little more than four times the par value, and the report adds: "Last payment of coupons, July 15, 1905." Not even the recent high price of rubber has served to support these shares, which a year ago were quoted at 3000 (for 500 francs par).

The ABIR company have always had close relations with the State. At a certain time a new arrangement was entered into [see THE INDIA RUBBER WORLD, February 1, 1907—page 142], under which, in lieu of the former conditions, the company should be entitled to receive on the quay at Antwerp, at the uniform price of 4.50 francs per kilogram [=39.4 cents per pound], any rubber which might be produced on its concession in Africa. The working under the new arrangement appears not to have been satisfactory.

At the annual meeting on June 7, referring to the trading for 1908, the report says:

"The rubber was of indifferent quality and the general crisis in the market compelled us to sell at a loss during more than six months of the year. You know that the minister for the colonies notified us that the working of the sources of rubber supply on the company's territory was to be discontinued on and after January 1. As a result of this state of affairs, the board of directors was greatly troubled, and the negotiations induced the minister to declare that he would collect information on the spot, as he earnestly desired to arrive at a solution which would respect the lawful rights of the stockholders. The ministerial decision was made in consequence of reports, declaring that rubber *lianas* (vines) were no longer to be found on the greater part of the concession. In contradiction of these reports we have presented other certified statements. The contract of September 12, 1906, proves the obligation of the government to take charge of the working for our account. The rights vouchsafed us by the said contract remain unimpaired. The information received leads us to believe that the order to cease gathering crops is not absolutely comprehensive, since certain gathering posts were said to be still in existence, at least on March 24 last."

In *La Chronique Coloniale* appears this extract from the company's profit and loss account for 1908:

DEBIT.			
General expenses in Africa and Europe.....francs	63,815.79		
Selling expenses and royalty on the products.....	264,342.37	328,158.16	
CREDIT.			
Net proceeds of sales.....	303,655.12		
Rebate on the license for 1904	10,338.31	313,993.43	
Debit balance		14,164.73	

This unfavorable showing—a loss on the year's trading—is

ascribed by the company to their having been obliged to sell rubber during part of the year at less than the price at which it was delivered by the government. The company having lived up to all its obligations, including the planting of the required number of rubber vines, it felt entitled to some compensation from the government, to obtain which formal steps have been taken.

There is not space here for a further discussion of the company's accounts, but the difference between two year's results, as shown by the published accounts—

Profits in 1900	4,873,356.00 francs
Loss in 1908	14,164.73 francs

—cannot be attributed alone to any governmental action. Even in 1904, when the trading profit had fallen to 1,201,400.89 francs, the ABIR company gathered 445 tons of rubber. The report for 1908 shows the collection of only 103 tons, "equivalent, on the basis of an estimated loss of 40 per cent, by drying, to a production of rubber amounting to 62 tons."

UNFAVORABLE RESULTS IN THE FRENCH CONGO.

THE accounts of Cie. Française du Haut-Congo presented at the last annual meeting (Paris, July 26), while showing a profit for the year 1908, revealed a gradual decline in prosperity. This is one of the more successful of the rubber trading companies holding concessions in the French Congo. It is, in fact, the only company, in a list of 32 existing ten years ago, which has shown a profit every year; some of the companies have ceased to exist. The report of the Française du Haut-Congo, therefore, may be regarded with special interest.

During the year 47,800 kilograms of rubber figured in their accounts against 70,885 kilos in the previous year; the amount of ivory, however, increased. The gross and net profits (in francs) and the dividends for four years have been:

	1905.	1906.	1907.	1908.
Gross profit	881,193.60	1,116,075.10	949,459.40	748,698.30
Net profit	322,593.20	475,289.70	304,073.60	150,444.95
Dividend on capital shares	7%	8%	7%	5%

[a The figure is not at hand.]

In addition to these dividends, 1½ per cent. on the "beneficiary shares" (common stock) was distributed in 1906 and 1 per cent. in 1907.

These figures are presented only as a single indication of the lack of success of the *concessionaire* trading system in the rubber regions of the French Congo. We may refer here to a table printed in *La Chronique Coloniale* (Brussels, July 22, 1906), in which details are given in regard to the 32 companies referred to already, for the years 1900 to 1904, inclusive. Their nominal capital amounted to 52,750,000 francs and their share issue to 35,040,062 francs. An analysis of their published reports of operations gave these figures:

Combined net losses in 1900.....francs	2,583,332
Combined net losses in 1901.....	4,255,077
Combined net losses in 1902.....	3,645,498
Combined net losses in 1903.....	1,257,760
Combined net gains in 1904.....	1,846,490

Combined net loss in five years..... 9,895,177

The one company, as already stated, which showed a net profit every year was the Française Haut-Congo. Their record of gain from the beginning has been (in francs):

1900.....	105,805	1903.....	79,781	1906.....	475,290
1901.....	110,698	1904.....	198,763	1907.....	304,074
1902.....	43,148	1905.....	322,693	1908.....	150,445

The best that can be figured from this is an average yearly return on the capital of less than 4½ per cent., which is not

large, considering the risks involved. The *cessionnaires* must at times have envied their neighbors in the Congo Free State, where close relations existed with the government of a strenuous king-sovereign.

LOWER DIVIDENDS OF A DUTCH COMPANY.

At the last annual meeting of Nieuwe Afrikaansche Handels Vennootschap (Rotterdam, July 8), accounts were presented which permit the following comparative figures to be given. The company is the oldest trading on the Congo, having established a branch at Boma before the Belgians became established there. Lately the company have held 340 of the 2010 shares in the Cie. du Kasai (Kasai syndicate). Rubber has figured largely in the operations of the company. The dividends derived from the Kasai holdings, which form only part of the company's profits, have been (for fiscal years ending October 31):

1906.....	286,882.00 florins	[= \$115,326.56]
1907.....	121,992.45 florins	[= 49,040.96]
1908.....	67,446.64 florins	[= 27,113.55]

The yearly dividends declared by the N. A. H. V. and the rate were as follows:

1906.....	358,453.50 florins	(17 per cent.)
1907.....	168,684.00 florins	(8 per cent.)
1908.....	105,427.50 florins	(5 per cent.)

The N. A. H. V. have been interested in the Cie. Bruxelloise pour Commerce du Haut-Congo to the extent of 200,000 francs, but this connection is to cease, the capital of the latter now to be reduced from 1,000,000 to 800,000 francs. The Bruxelloise company have worked for some time at a loss, the profit and loss account being debited at the last annual meeting (Brussels, June 30) at 219,975.06 francs.

CAPITAL ATTRACTED TO THE FAR EAST.

THE declining output of rubber from the Belgian Congo (formerly the Congo Free State) continues to lead to developments of interest pointing to the disposition of Belgian capitalists to seek investments in rubber in new directions. The average yearly receipts of Congo rubber at Antwerp for the ten years 1899 to 1908 inclusive were 4,584.6 tons, the largest year being 1901 (5,417.4 tons). During the first six months of the present year 1,716 tons arrived, against 2,257.5 tons in the same period of last year.

The interest of the Belgian rubber trade in the planting interest in the Far East has been noted already in THE INDIA RUBBER WORLD, at various times. Mention has been made of companies formed in Belgium to promote rubber planting in Malaysia, in which an important part was taken by leading members of the crude rubber trade in Antwerp, whose interest formerly was in the produce of the Congo Free State.

The latest development in this field has been the organization at Antwerp of the Société Financière des Caoutchoucs, with a capital of 31,000 shares, the subscribers to which are:

	SHARES.
The Belgian Congo government.....	1,000
Bunge & Co. (Antwerp) and other Bunge interests.....	6,000
Members of Grisar & Co. (Antwerp).....	2,000
Antwerp bankers.....	3,000
Brussels bankers and merchants.....	2,000
Paris bankers.....	6,000
Geneva bankers.....	4,000
Rotterdam bankers.....	2,000
Amsterdam merchants.....	1,000
Naples merchants.....	1,000
German merchants.....	2,000
Hon. Everard Fielding, London.....	1,000

Bunge & Co., named above, are the largest consignees of rubber at Antwerp, receiving all the rubber in which the Congo State has an interest. Grisar & Co. are the official rubber brokers at Antwerp. The subscribers to the shares of the new company include directors in these important rubber planting companies, among others:

Federated Malay States Rubber Co., Limited—Selangor.
Kuala Lumpur Rubber Co., Limited—Selangor.
Veneenigde Hevea Plantagen der Billa Landen—Sumatra.

The new Antwerp company has for its object investments in rubber planting undertakings which may appear attractive, either new enterprises or those already established which may need additional capital for their further development. It is understood that arrangements have been made for the coöperation of the new Antwerp company with the new Eastern International Rubber Produce Trust, Limited, recently brought out in London with £500,000 [= \$2,433,250] capital. A dinner attended by members of both companies was given at Antwerp on the evening of July 12, in honor of Mr. Edouard Bunge, of Bunge & Co., to welcome him as president of the Société Financière des Caoutchoucs.

INCREASE IN THE GUAYULE TRADE.

WHILE no exact figures are available as to the exact amount of guayule rubber produced or sold, a fair idea can be gained from the statistics of Mexican crude rubber generally. Before the appearance of guayule in commercial quantities, the exports of rubber from Mexico averaged less than 400,000 pounds annually, and it is probable that they do not now exceed 500,000 pounds. It may be assumed, therefore, that the figures given below, in excess of 500,000 pounds yearly relate to guayule:

UNITED STATES IMPORTS OF MEXICAN RUBBER.

	Pounds.	Value.	Average.
Year ended June 30, 1904.....	366,104	\$148,921	40.7 cents.
Year ended June 30, 1905.....	352,690	185,951	52.7 cents.
Year ended June 30, 1906.....	1,705,915	866,283	50.6 cents.
Year ended June 30, 1907.....	7,175,097	2,877,022	40.1 cents.
Year ended June 30, 1908.....	9,260,443	3,888,684	41.9 cents.
Year ended June 30, 1909.....	15,460,365	5,466,004	35.3 cents.

MEXICAN EXPORTS OF CRUDE RUBBER.

[Official Returns for Years ending June 30.]

	1906-07.	1907-08.
To Germany.....pounds	2,016,230	2,067,872
To Belgium.....	33,211	196,084
To Spain.....	35,389	46,266
To United States.....	8,128,380	9,788,962
To France.....	105,787	39,827
To Great Britain.....	1,855	230,351
To Canada.....	.....	783
To British Honduras.....	114	961
To Panama.....	.....	535
To Italy.....	282	.....
Total.....	10,321,248	12,372,241

The exports for the last six months of the year 1908 are officially reported at 6,121,863 pounds.

GUAYULE SHRUB.

The exportation of the guayule shrub, to be worked into rubber elsewhere, is increasing at a rapid rate in spite of the export duty imposed. The figures are:

Fiscal year 1906-07.....pounds	1,471,226
Fiscal year 1907-08.....	2,844,325
July-December, 1908.....	1,722,836

During the first year under review the greater part of the shrub exported was taken by the United States, to-day a third or more goes to Germany.

THE Kommerzienrat Seligmann, of the Continental Caoutchouc und Gutta-Percha Compagnie, of Hanover, celebrated recently the thirtieth anniversary of the day on which he entered upon the office of manager of the company. Herr Direktor Seligmann was only 26 years of age when he was called upon to take his place at the head of this manufacturing concern. It would be idle to refer in detail to the importance of Mr. Seligmann's work in behalf of the company he manages. His name and achievements are known to all who are interested in the rubber industry. Thirty years ago the company was still in its infancy, while it is numbered at the present time among the largest rubber manufacturing concerns in the world.

Recent Patents Relating to Rubber.

UNITED STATES OF AMERICA.

ISSUED JULY 6, 1909.

- N**O. 926,757. Puncture indicating device for tires. J. L. Marraud, Worcester, Mass.
- 926,783. Vehicle wheel. [With elastic tire.] J. W. Thompson, Wham, La.
- 926,830. Vehicle wheel. [With elastic tire.] J. Sinnott, Philadelphia.
- 926,969. Vehicle tire. [Solid rubber, with special means of attachment.] B. C. Swinehart, Akron, Ohio.
- 927,006. Tire. [Segmental, in solid blocks.] C. L. Schwarz, Philadelphia, Pa.
- 927,122. Vehicle tire. [Pneumatic.] J. G. Cramer, East Orange, N. J.
- 927,190. Piston packing. G. R. Thompson, assignor to Martha Thompson, both of Republic, Mich.
- 927,254. Tire adjuster. A. A. Long, assignor to Long & Mann Co., all of Rochester, N. Y.
- 927,266. Means for securing the tires of automobiles and other vehicles. A. J. Michelin, Clermont-Ferrand, France.
- 927,282. Rubber overshoe and fastening device therefor. L. Reed, Lambertville, N. J.
- 927,287. Process for making rubber footwear. E. A. Saunders, South Bend, Ind.
- 927,298. Pressure gage for pneumatic tires. C. R. Twitchell, Los Angeles, Cal.
- 927,304. Tire filling compound. F. M. Willett, Indianapolis, Ind.
- 927,336. Hose connection. I. S. Dummer, Crafton, Pa.
- 927,355. Tire. K. Karlstrom. [A metallic band is embedded in the solid rubber portion.] G. Holmqvist, Buffalo, N. Y.
- 927,376. Nozzle for hose. E. Nelson, Jersey City, N. J.
- 927,388. Hose coupling. E. Watkins, Cleveland and J. H. Miller, Elyria, O.
- 927,410. Hose rack. A. Jones, Los Angeles, Cal.
- 927,447. Tire armor. W. J. Belyea, Port Huron, Mich.

ISSUED JULY 13, 1909.

- 927,477. Tire. [For motor cars; solid rubber, rendered more resilient by a plurality of transverse openings.] J. C. Barker, Leeds, England.
- 927,578. Elastic tread vehicle wheel. J. Murrey, Cleveland, Ohio.
- 927,623. Hose rack. R. D. Wirt, Philadelphia.
- 927,624. Hose rack. *Same*.
- 927,676. Vehicle tire. [Solid rubber, with springs between the same and the rim.] D. Pollard, Philadelphia.
- 927,687. Vehicle wheel rim. E. C. Shaw, Akron, Ohio, assignor to The B. F. Goodrich Co.
- 927,787. Tire protector. [Chain, or square metal plates; for pneumatics.] W. Green, Harvey, Ill.
- 927,793. Pneumatic tire and clamping means. H. M. Hartman, assignor of one-half to O. P. Hanson, both of Minneapolis, Minn.
- 927,891. Vehicle wheel. [With spring spokes and elastic tire.] E. S. Stencliff, Berkeley, Cal.
- 927,980. Tire protector. [Combination of curved metal plates.] C. E. Kimball, Council Bluffs, Iowa.
- 928,060. Repair device for tires. O. C. Reich, Denver, Colo.

Trade Marks.

- 34,681. Empire Automobile Tire Co., Trenton, N. J. The word *Empire* within the representation of a crown. For rubber tires.
- 35,640. Leo. H. Backeland, Yonkers, N. Y. The word *Bakelite*. For condensation products of phenol and formaldehyde. [The material Bakelite has been suggested as a substitute for hard rubber.]

ISSUED JULY 20, 1909.

- 928,237. Hose coupling. J. P. Baird, Detroit, Mich.
- 928,334. Pneumatic tire. R. J. Ruths, Baltimore, Md.
- 928,411. Valve for pneumatic tires. G. De Vigne, Cheltenham, England.
- 928,433. Pneumatic tire armor. C. E. Evans, Council Bluffs, Iowa.
- 928,520. Anti-vibration device for vehicles of any kind. [India-rubber is inserted between the body and the under frame of a car.] G. Huysmans, Brussels, Belgium.
- 928,553. Signal for pneumatic tires. [The device includes an inflatable bulb and a whistle to indicate when a tire is punctured.] S. Silverman and J. E. Traham, Watertown, N. Y.
- 928,556. Belt fastener. G. H. Smith, Easton, Pa., assignor to Acme Belting Co., N. J.
- 928,601. Vehicle cushion wheel. F. Groff, St. Johnsville, N. Y.
- 928,611. Vehicle tire. [Clincher type; with special rim.] W. A. Kōneman, Cudahy, Wis.
- 928,678. Gaiter or patch for repairing pneumatic tires. H. Marles, Manor Park, England.
- 928,718. Rubber spading boot. [Strengthened by means of a sub-sole.] S. V. Van Denburgh and J. H. Glismann, Syracuse, N. Y.
- 928,731. Vehicle tire. [Pneumatic.] M. Behrer, New York city.
- 928,797. Hose connection for wheel tires, etc. E. J. Rohrbacher, Blaine, Wash.
- 928,840. Belt fastener. R. M. Bennett, Indianapolis, Ind.
- 928,868. Non skid tire. E. Kempshall, London, England, assignor to Kempshall Tire Co., of Europe, Limited.

ISSUED JULY 27, 1909.

- 929,136. Spring heel shoe. J. C. Ivory, Dolkevill, Cal.
- 929,193. Cover for pneumatic and like tires. H. W. Cave-Browne-Cave, London, England.

- 929,203. Tire shield. J. H. Fletcher, Seattle, Wash.
- 929,208. Wheel. [With means of excluding moisture and dirt from between felloe and elastic tire.] L. J. Goodspeed, Rockford, Ill.
- 929,234. Wheel. [With detachable rim for pneumatic tire.] F. R. Mather, Whitesville, N. Y.
- 929,255. Tire fluid container. C. E. Singleton, Brooklyn, N. Y.
- 929,351. Pneumatic tire. P. I. Viel, Paris, France.
- 929,418. Tire. [With resilient core.] G. H. Gillette, New York city.
- 929,437. Vehicle wheel. [With detachable rim for pneumatic tire.] W. L. Howard, Trenton, N. J.
- 929,501. Rubber stamp device. H. Schmidt, Elizabeth, N. J., and J. Heissenberger, New York city.
- 929,570. Spring wheel. [With elastic tire.] C. L. Drier, San Francisco.
- 929,571. Valve for pneumatic tires. E. Dubied, assignor to Edouard Dubied & Cie., Couvet, Switzerland.
- 929,572. Spring wheel. [With elastic tire.] W. Eckert, Northwood, Iowa.
- 929,617. Rubber tire setter. [For solid rubber tires.] C. A. Maynard, assignor to Maynard Rubber Corporation, Springfield, Mass.
- 929,620. Tire. [Composed of disks of rubber ranged on a split ring.] G. E. Miller, Newton Center, and C. M. Wheaton, Newtonville, Mass.; said Wheaton assignor to said Miller.
- 929,632. Tire tread. [Having a multitude of air chambers formed within and thereon.] J. R. Sanford and J. G. Doughty, assignors to the Flexible Rubber Goods Co., all of Winsted, Conn.

Trade Marks.

- 42,558. The American Vitalizing Co., Oakland, Cal. The letters *K-U-Q*. A preparation of oils for softening leather and rubber.

GREAT BRITAIN AND IRELAND.

PATENT SPECIFICATIONS PUBLISHED.

The number given is that assigned to the Patent at the filing of the Application, which in the case of these listed below was in 1908.

^aDenotes Patents for American Inventions.

[ABSTRACTED IN THE ILLUSTRATED OFFICIAL JOURNAL, JULY 7, 1909.]

- 5,279 (1908). Composition for electrical insulation, for waterproofing, or for addition to india-rubber and gutta-percha. E. S. Ali-Cohen, Singapore.
- 5,308 (1908). Rubber tire surrounding a metal band. A. Bom and J. Lamed, Amsterdam.
- 5,368 (1908). Pneumatic tire with protected non skid cover. A. T. Parker, Chorley, Lancs.
- 5,584 (1908). Pneumatic tire in dual or triple form, resting on a pneumatic cushion. E. E. Michelin, Clermont-Ferrand, France.
- 5,637 (1908). Rubber tire enclosing helical spring. G. A. Ritson, Manchester.
- 5,756 (1908). Wheel provided with two or more pneumatic tires carried on detachable rims. E. E. Michelin, Clermont-Ferrand, France.
- 5,847 (1908). Spring wheels with elastic tread and interior rubber cushion. Soc. Anon. des Automobiles E. Brillé, Paris, France.
- 5,868 (1908). Rolls of a macerating, sheeting, or "crepe" machine internally heated by steam for preparing crude india-rubber in order to dispense with the vacuum dryer. F. R. Durham, London.
- 5,874 (1908). Solid rubber tire rendered more resilient by means of transverse perforations. J. V. F. A. Yberty and E. B. Merigoux, Paris.
- 5,875 (1908). Perforated sectional rubber tire vulcanized to metal plates. *Same*.

[ABSTRACTED IN THE ILLUSTRATED OFFICIAL JOURNAL, JULY 14, 1909.]

- 5,936 (1908). Fabric insertion for pneumatic tire covers, comprising one length of bias fabric wound spirally in a circumferential direction to give the required number of layers. Vereinigte Berlin-Frankfurter Gummiwaren Fabriken, Gelnhausen, Germany.
- 6,071 (1908). Pneumatic tire with protective metal disc. A. F. Brewster, London.
- 6,185 (1908). Pneumatic tire with puncture preventing band. L. Greenwald, S. B. Nye, and W. F. McClurg, Buffalo, New York.
- 6,327 (1908). Clamps and expanding mandrel for use in the repair and manufacture of rubber tires. R. Davis, Riddulph, near Congleton.
- 6,457 (1908). Rim for pneumatic tires with detachable flange. A. H. Culley, London.
- 6,459 (1908). Dress shield. V. Guinzburg and I. B. Kleinert Rubber Co., New York City.

[ABSTRACTED IN THE ILLUSTRATED OFFICIAL JOURNAL, JULY 21, 1909.]

- 6,530 (1908). Bolt to allow the removal of an air tube without disturbing the security bolt. Michelin et Cie., Clermont-Ferrand, France.
- 6,542 (1908). Combined surgical syringe and hot water bag. C. P. Leyner, Boston, Massachusetts.
- 6,545 (1908). Elastic tire formed of strips superposed radially and containing india-rubber or tow with gelatinous binding. A. Umlauf and K. Böhm, Vienna, Austria.
- 6,570 (1908). Tires in section of cork or rubber or both separated by metal bands. H. A. Yates, London.
- 6,927 (1908). Non slipping tire tread. J. L. Lemoine, Paris, France.
- 6,956 (1908). Tire fabric. J. van Gheluwe, Ghent, Belgium.
- 6,982 (1908). Solid rubber tire. W. H. Bailey, Hulme, Lancs.
- 7,031 (1908). Sleeve of waterproof coat provided with flap to prevent the penetration of rain. R. A. Bradbury, Christchurch, New Zealand.

- 7,042 (1908). India-rubber hand stamp for printing in more than one color. E. M. Richford and two others, London.
- 7,124 (1908). Pneumatic tire with studded tread. J. H. Messenger, London.
- [ABSTRACTED IN THE ILLUSTRATED OFFICIAL JOURNAL, JULY 28, 1909.]
- 7,165 (1908). Pneumatic tire with a wire ring for the edges. G. Spencer and E. L. Curbishley, Manchester.
- 7,196 (1908). Golf ball with core wound rubber thread and cover of india-rubber. P. H. Haddleton, London.
- 7,209 (1908). Spring wheel with rubber tire. P. E. Lefevre, Plaine St. Denis (Seine), France.
- 7,263 (1908). Puncture preventing band for pneumatic tire. H. W. Pickering, Porte Hamlet, Norwich.
- 7,294 (1908). Non skid band for pneumatic tires. T. M. Cahill and E. G. L. Peraux, London.
- 7,355 (1908). Detachable rim for rubber tires adaptable to a disc wheel. H. Perrins, Smethwick.
- 7,490 (1908). Puncture preventing band for tire covers. A. Gower, London.

THE FRENCH REPUBLIC.

PATENTS ISSUED (with Dates of Application).

- 399,194 (Feb. 6, 1909). V. E. Belledin. Soft rubber tire.
- 399,192 (Feb. 6). T. Gare. Process for making goods from waste rubber.
- 399,209 (April 15, 1908). Société Générale à Pneumatique. Pneumatic tire cover.
- 399,222 (April 16, 1908). P. Joliot. Puncture proof tire.
- 399,223 (April 16, 1908). P. Joliot. Tire inflatable with gas.
- 399,224 (April 16, 1908). P. Joliot. Pneumatic tire with multiple air chambers.
- 399,233 (Feb. 1, 1909). P. Landais. Pneumatic tire.
- 399,338 (Dec. 12, 1908). G. Huysmans. Shock absorber for vehicles.
- 399,341 (Jan. 5, 1909). J. Blum and A. W. Carpentier. Manufacture of artificial Para rubber.
- 399,509 (Jan. 28). Durochat, Millon and Vollet-Bert. Elastic tissue.
- 399,522 (Feb. 15). L. P. Lanstred. Elastic tire.
- 399,543 (Feb. 16). J. C. Berry. Tire protector.
- 399,615 (Feb. 18). J. Spyker. Improvement in elastic tires.
- 399,654 (Feb. 19). Société Générale des Etablissements Bergounan. Demountable wheel rim.
- 399,540 (Feb. 16). A. Bine. Demountable horseshoe.
- 399,459 (Feb. 12). F. Boegel and A. Kiander. Process for obtaining pure caoutchouc.
- 399,613 (Feb. 18). O. C. Immisch. Process for the manufacture of ebonite and vulcanite.
- 399,614 (Feb. 18). O. C. Immisch. Manufacture of objects in ebonite and vulcanite.
- 399,446 (Feb. 13). J. O'Brien. Apparatus for making heels for boots.
- 399,761 (Feb. 8). F. F. Kerr. Pneumatic tire.
- 399,773 (May 2, 1908). Société Hirtz, Michel Levy & Bloch. Protective device for pneumatic tires.
- 399,714 (Jan. 26, 1909). L. E. Jannin. Manufacture of insulated wire.

[NOTE.—Printed copies of specifications of French patents may be obtained from R. Bobet, Ingenieur-Conseil, 16 avenue de Villier, Paris, at 50 cents each, postpaid.]

CEYLON.

[SEALED UNDER "THE INVENTIONS ORDINANCE, 1906."]

1086. Alexander Cameron and David Stuart Cameron. Improvements in tapping and incising tools for rubber and other latex-bearing trees. May 6, 1909.
1071. John Blum, Brussels, Belgium, and A. W. Carpenter, London. Improvements in and relating to the manufacture of artificial rubber. May 30, 1909.
1012. Thomas Cockerill, Colombo. Improvements in apparatus for the extraction of india-rubber from latex by electricity. June 15, 1909.
1063. Charles Northway, Elpitia, Ceylon. Artificial channels for conveying latex from trees. June 16, 1909.

BATHING WITH MOTOR TIRES.

[FROM "THE NEW YORK TIMES."]

A NEW bathing fashion has been started at Ostend by a chauffeur who, dressed in scarlet and with a Phrygian cap, entered the sea with the inflated inner tube of a motor car tire. First he trundled it as a child does a hoop. Then sitting on it as in a life buoy, he paddled about, propelling himself with his hands or lay basking in the sun. His enjoyment was so manifest that in joke a party of women swimmers borrowed the tire and, with shrieks of laughter, imitated his antics. The idea has taken and scores of persons now disport themselves in the sea on the tubes of their motor cars. Impromptu races attract many competitors, and not to take a tube sun bath is to be out of the mode.

[FROM "THE NEW YORK EVENING JOURNAL."]

A PRETTY young guest at the Hotel Nassau, Long Beach, is

responsible for a new fad which became immediately popular after her introduction of it at that beach resort, and has now spread to several of the beaches along the Jersey coast. This fad is bathing with the aid of the inner tube of an automobile tire.

The lady heard of the fad from a friend abroad who saw it first at Ostend. A chauffeur started it there. It consists in using the rubber tube, inflated, as a kind of life preserver and seat combined, with which it is possible to float about on and over the combers as they roll shoreward.

The practice has become so popular that now along the shore at Long Beach any day during the bathing hour young men and women may be seen floating about atop these automobile tires, mounting and descending the huge waves and having a vociferously good time generally.

NOTES ON A VISIT TO AMERICA.

BY PHILIP SCHIDROWITZ, PH. D.

DURING a recent visit to America I had the privilege of seeing a number of leading factories and also some of the chief government institutions. I was much struck by the cordial and open manner with which I was received in the various works and by the ready permission granted to inspect practically anything that I wished to see. It was impossible not to contrast the American methods in this regard with the ultra-conservatism displayed in so many of the European works. Naturally, however, most of that which was of particular interest, I must regard as "not for publication," or I should be making a poor return for the great courtesy displayed. There are a few points on which it will not be amiss, I believe, to make some comments.

Raw Material.—I was astonished at the apparently very large quantity of guayule employed in the American works. Most of it seems to be in semi-purified loaves, containing 20 to 30 per cent. of resin. There is also a commercial article purified to 2 to 3 per cent. of resin, but I did not come across much of this. It will be of interest to people on this side to know that rubber manufacturers in the United States are very favorably inclined to the better qualities of clean plantation rubbers or to rubbers prepared on the plantation system. I came across a good deal of Ceylon and Malay *Hevea* and also some fine *Funtumia* from Uganda, which were all well liked. A complaint was made regarding some of the Eastern rubbers which I think deserves the attention of planting companies, and it was that frequently numerous bits of bark, twigs, etc., are found between the biscuits, crepe and sheet. This involves washing, which operation, for this class of raw material, should be quite unnecessary. I need scarcely say that I am not referring to "bark scrap." What is required is a little more care in packing. American manufacturers, like their English colleagues, are very emphatic on the point that planters should mark all their goods in some simple fashion, as this enables the manufacturer to know exactly what he is buying—a matter, in view of the considerable differences between various plantation rubbers, of some importance to him. Certainly there is a very large field in the United States for the plantation product.

Finished Goods.—For obvious reasons, I cannot refer to details of manufacture, but speaking generally, I think I may say that there is a tendency on the part of the American manufacturer to work for greater mechanical strength than is general on this side. The reason, I believe, is that "tensile" tests in contracts are much more common than in Europe.

In conclusion of these brief notes, I should be glad of the opportunity of expressing my thanks to the various manufacturers, officials and others in America for their great courtesy and hospitality to me during my stay.—*The India-Rubber Journal* (London).

India-Rubber in Aerial Navigation.

WHAT has been said so often of india-rubber as a necessity in connection with the automobile seems liable to be repeated, and with good reason, in connection with dirigible balloons and flying machines. *The India-Rubber Journal* says:

"It is not astonishing to learn that ubiquitous rubber is an important feature in the coming vehicles. The cloth for airships, balloons, or aëroplanes, is proofed with rubber, while the machine with which M. Blériot flew over the English channel was equipped with a long india-rubber cylinder filled with air, which would have acted as a float had the aëroplane fallen into the water. The wheels of the machine were fitted with pneumatic tires, and there were other rubber fittings used in the machine, so that the demand for rubber is likely to survive even if airships take the place of land or water carriages."

There is now in progress at Frankfort-on-the-Main the Internationale Luftschiffahrt-Ausstellung (International Airship Exhibition), not the least interesting feature of which consists of exhibits of rubber proofed fabrics for the various machines which have been designed for aviation. The notes which follow, in reference to the more notable exhibits at Frankfort, are presented here with apologies to the *Gummi-Zeitung*.

* * *

THE Continental-Caoutouc- und Guttapercha-Compagnie (Hanover) has an exhibit of "Continental" balloon and aëroplane fabrics which is most tastefully arranged. "By means of enormous photographs the company show airships constructed of Continental fabrics. There are a good many of them, since the Continental balloon fabric has been used for the construction of nearly all the airships in the world. The Continental balloon and aëroplane fabric is also frequently represented, even in the case of the balloon Preussen, with a gas capacity of 8,400 cubic meters [= 296,654 cubic feet], which although about 12 years old, does not show the slightest defect, and is still being used for making ascensions. This balloon attained, as early as 1901, the record height of 10,500 meters [= 34,449 feet]. The collection of various kinds of balloon, aëroplane and airship fabrics manufactured by the Continental company is exhibited in a most comprehensive manner."

* * *

THE most conspicuous object of the exhibit of the Vereinigte Gummiwaaren-Fabriken Harburg-Wien is a new spherical balloon of 945 cubic meters capacity, constructed of diagonally lined cotton fabric, with complete equipment. In consequence of its nice, attractive appearance, this balloon found a purchaser as soon as exhibited, and, as it has already been definitely sold, the manufacturers are compelled to have a new balloon constructed for the exposition. A novel feature of the company's exhibit consists in a valve for free balloons. In this valve the joints of the hinges which connect the valve disc with the upper valve ring or hoop, are provided with springs, these springs being the main feature of the device, inasmuch as they insure absolutely reliable operation, since the valve disc must necessarily always return to the same position. The valve is made tight by means of a folded rubber band, tapering towards the top, which presses against a rubber membrane. Applications for patents on this valve have been filed.

In addition to a number of samples of fabrics for free balloons and power balloons, as well as of aëroplane fabrics, the company also exhibits a raincoat especially adapted to the requirements of aëronauts. The reason for providing this garment was the experience gained during a balloon trip made recently from Cologne in rainy weather, during which the aëronauts got a most thorough wetting. The material used for the garment has a thick

rubber coating in the outside, so as to prevent it from absorbing any water, even during the most severe rain storms. The coat has only one opening, the same being at the neck, and a special flap made of rubber cloth and attached to the coat under the opening, prevents water from entering through the same. The coat is provided with a hood for protecting the head. For protecting the feet, the company likewise make rubber cloth boots reaching up to the knees, and sufficiently large for putting them on while wearing common shoes or boots. Various other articles of minor importance will also attract the visitor's attention. The covering of the model balloon exhibited by the Rheinisch-Westfälische Motorluftschiff-Gesellschaft as well as that of the large power balloon, now nearly completed, were likewise made by the Vereinigte Gummiwaaren-Fabriken Harburg-Wien.

The Mitteldutsche Gummiwarenfabrik, Louis Peter, A.-G., of Frankfort o/Main, are exhibiting a spherical balloon, as well as supplies for balloon manufacturers.

* * *

THE Aktiengesellschaft Metzeler & Co., of Munich, has followed the plan of exhibiting only its achievements during a period of nearly 20 years in the manufacture of balloon fabrics. Its exhibit is consequently not made conspicuous by large decorative designs, but shows balloon fabrics exclusively. A large revolving stand, provided with 10 arms, carries a corresponding number of samples of various balloon and aëroplane fabrics, comprising one, two and three ply fabrics with and without outside rubber coating. The concern shows fabrics for ordinary balloons, airships of the rigid, semi-rigid, and non-rigid types, as well as fabrics for the wings of flying machines. It is a well-known fact that the Metzeler concern has supplied the fabric for numerous balloons; no less than 15 balloons constructed of Metzeler balloon fabric having taken part in the Gordon Bennett aëro contest in 1908. The airship "Parseval I," and part of the airship "Zeppelin II," are likewise constructed of the same material. Balloons made of Metzeler balloon fabric have, moreover, gained numerous victories. The balloon "Pomern," for instance, which was awarded the Gordon Bennett prize in 1907, has become widely known. During the current year balloons constructed of Metzeler balloon fabrics were again successful. The balloons "Hildebrandt" and "Schlesien" came out victorious in the preliminary contest for this year's Gordon Bennett aëro contest, and were awarded first and second prizes. At the international balloon race held in Cologne on June 29, two first prizes were awarded to balloons constructed of Metzeler fabric. A number of photographs exhibited by the concern, and showing interesting incidents of balloon ascensions and landings, proved very attractive to the visitors, and the entire exhibit makes the impression that the company's earnest efforts have been crowned with most satisfactory success, and that the concern will undoubtedly take its place among the foremost manufacturers of balloon fabrics.

* * *

THE Rheinische Gummiwarenfabrik Franz Clouth, Köln, have sold to the "Ija" a completely equipped free balloon of 900 cubic meters capacity. Yellow coloring has hitherto been used for protecting the rubber against decomposition by the action of the sun rays, because it reflects the largest number of rays. More recent investigations, however, make it appear probable that the same purpose may be attained, even more effectively, by using red coloring. Neither does it appear improbable that red colored balloons will stand out less conspicuously against the background of the sky than yellow colored balloons, a factor which is of importance from a military standpoint, because it would make effective shooting at balloons more difficult. In the spring of the current year a balloon caught fire in

Berlin when the valve opened during an ascension. The question whether the ignition of the gas is to be attributed to the use of metal parts on the valves, still remains unsolved, although there is undoubtedly a possibility that the use of wooden valves would obviate the danger of ignition. The Clouth concern has constructed such a valve, in which there is absolutely no metal part. The very numerous endurance and distance contests held during the past few years, in which such exceedingly high time records as 72 hours, for instance, were made, have been the means of gathering a good deal of experience in regard to the question of making the most practical use of the limited space in the basket or car, so to make it as comfortable as possible for the aeronauts. The providing of such comfort is the only means for preserving their physical strength and keeping them in condition for withstanding the severe strain and exertion. The basket or car manufactured by the Clouth concern not only provides comfortable seats, but also a cot on which the aeronauts can lie at full length. Moreover, the basket or car wall required for this arrangement has been so constructed that the strength of the car or basket itself remains practically impaired, and that it appears well able to withstand the shock of landing even under the most unfavorable circumstances.

* * *

"In all manufacturing lines in which sewing machines are used, the Singer machines are in the front rank, and this likewise applies to balloon sewing. The styles used for this purpose, viz.: flat and post machines with one or several needles, adapted for sewing simultaneously several parallel lockstitch seams, have proved their efficiency for this kind of work for a number of years past. For sewing widths of fabrics with adhesive surface, these sewing machines are furnished on request with alternating presser foot. The Singer Company Nähmaschinen A.G., of Frankfurt-on-Main, are exhibiting several of these machines. In this connection we would express our surprise at the fact that no German sewing machine manufacturer has had sufficient foresight to exhibit such machines at this exposition, although Germany boasts of a considerable number of sewing machine works manufacturing special machines for all trades."

INTERNATIONAL AIRSHIP TESTS.

THE historic French city of Rheims was the arena, during the last week in August, of the most important series of contests in the history of aeronautics. Forty-four machines—monoplanes and biplanes—were entered for seven different contests, by representatives of five nations. Neither of the Wright brothers participated, but five of their biplanes were at Rheims, operated by their pupils or persons who had purchased the machines. The United States were further represented by the Herring-Curtiss biplane. Louis Blériot, the Frenchman who recently sailed over the English Channel in his monoplane, was an entrant in contest for the valuable *coupe internationale d'aviation*, scheduled for August 28. Besides the expensive trophies, cash prizes aggregating 400,000 francs [= \$77,200] were offered. According to a recent announcement of the Aéro Club of France, all the contestants at the Rheims meeting were entitled at the same time to compete for the Michelin distance prize of 20,000 francs [= \$3,860], which last winter was won by Wilbur Wright, an American, in a flight of 76.38 miles. This is a prize to be given annually for eight years to the aviator making the greatest distance during the year. The results were not available in time for publication in this issue.

AIRSHIP PATENT LITIGATION.

THE latest indication of the advent of the aeroplane as a practical invention is indicated by the beginnings of litigation over patents between rival inventors. The Wright brothers

have filed a suit in the United States circuit court at Buffalo, New York, against Glen H. Curtiss and the Herring-Curtiss Aeronautic Co., of Hammondsport, N.Y., alleging infringement of patents. The Wrights have also filed a suit in New York city against the Aeronautic Society.

"As an answer to their suit," said A. M. Herring, president of the Herring-Curtiss company, in a New York *Herald* interview, "we are doubling the capacity of our works at Hammondsport, and now have 120 men working day and night on aeroplanes alone."

It is reported that Monsieur Blériot has obtained a monopoly in France of the type of motor in his flight over the English channel, and possibly litigation will result. M. Blériot is mentioned as having made a fortune from patents on automobile attachments before becoming interested in aviation. The relation between aerial navigation and other forms of transportation is further suggested by the fact that Glenn H. Curtiss at one time made a world's record for motorcycle speed on a machine embodying a motor of his manufacture.

NEW TRADE PUBLICATIONS.

NEW JERSEY CAR SPRING AND RUBBER CO. (Jersey City) issue a pamphlet on Rubber Belting, designed to be of interest and service to all users of belting. There are general hints on the care of belting and for the choice of belts for various conditions of use, followed by descriptions of the various types made by this long-established company. The book contains a cut of what is described as the largest rubber belt ever made, as an indication of the capacity of the company's plant. [4¼" x 67⁄8". 24 pages.]

THE HARTFORD RUBBER WORKS CO. (Hartford, Connecticut) issue a new booklet, "A Factory's Progress and Product," in which is described their various types of tires, treads, inner tubes, tire supplying machinery and the like, together with mats, horn bulbs, repair outfits and other accessories of automobiling. [8¼" x 9". 28 pages.]

CENTRAL ELECTRIC CO. (Chicago) issue a price list and discount sheet applying to their 1909 Catalogue—No. 26. The company make a specialty of Okonite wires. It is noted that prices are advanced on rubber-covered wire. [6" x 9". 64 pages.]

SAKS & CO. (New York) issue a new edition of "Everything for the Autoist but the Auto." It is a handsome publication, appropriate for the setting off of a handsome line of motor clothing, including a number of items for men and women waterproofed with rubber. [5" x 9". 117 pages.]

THERMOID RUBBER CO. (Trenton, New Jersey) issue a booklet describing their "Thermoid" brake lining, followed by expressions favorable to this material from owners of automobiles of various types who have used it. [3½" x 6¼". 8 pages.]

WERNER, PFLEIDERER & PERKINS, LIMITED (Petersborough, England), issue their catalogue No. 015 of Special Machinery for the Treatment of Rubber, Gutta-percha, Balata, Bitumen, Asbestos, Compounding Materials, etc., including the new patent "Universal" Washer. [11¼" x 9". 12 pages.]

THE BOOMER & BOSCHERT PRESS CO. (Syracuse, New York) issue a catalogue of their knuckle joint and screw presses, including their well-known line adapted to use in rubber factories. [57⁄8" x 8¾". 110 pages.]

JOSEPH DIXON CRUCIBLE CO. (Jersey City, New Jersey) are sending out a booklet on "The Proper Care of Belts," with special reference to the use of graphite as a belt dressing. [3¾" x 6¼". 24 pages.]

THE OHIO RUBBER CO. (Cleveland and Cincinnati) send a new catalogue of Buckeye Brand Waterproof Clothing for the trade of 1909-10, including mackintoshes, cravenettes and rubber surface clothing, slickers and oiled clothing. Among their specialties are automobile wearing apparel [5¼" x 7¾". 28 pages.]

Some Rubber Interests in Europe.

RUSSIAN-AMERICAN COMPANY PROFITS.

THE net profits of Gesellschaft Russisch-Amerikanischen Gummi-Manufaktur unter der Firma "Treugolnik" (Russian-American India-Rubber Co.) for the business year 1908 amounted to 5,845,899 rubles [= \$3,010,638], against 4,016,448 rubles in 1907 and 4,369,987 rubles in 1906. The dividends for the three years amounted to 26.25 per cent. in 1906, 25 per cent. in 1907, and 30 per cent. in 1908. The amount disbursed for dividends in 1908 was 2,400,000 rubles [= \$1,236,000]. The *Gummi-Zeitung* says: "The increase in the gross revenue, from 36,252,040 rubles in 1907 to 38,953,150 rubles in 1908, must apparently be principally attributed to a much more liberal credit system. The outstanding debts, which amounted at the end of 1907 to 4,587,432 rubles, represented at the end of 1908 a sum of 13,635,879 rubles, being therefore about three times as large as at the end of the preceding year, while the exchange account, amounting to 315,490 rubles in 1907, was increased to 30 times that amount within a single year, being 9,613,368 rubles at the end of 1908. The extension of the company's operations in this respect was only made possible by the fact that the capital stock was increased, shortly before the end of the book year 1908, from 8,000,000 to 18,000,000 rubles, face value. The supply of funds derived by the company from this source, amounted to 17,000,000 rubles."

PROFITS OF HUTCHINSON.

THE annual meeting of Etablissements Hutchinson — Cie. Nationale du Caoutchouc Souple was held on June 14. The report showed profits of 1,333,080 francs [= \$257,284.44], against 1,305,579 francs in the preceding year. With the carryover (27,847 francs) the amount disposable was 1,360,927 francs [= \$262,658.91]. The capital of the company consists of 1,463 shares of 10 per cent. preference stock and 18,537 ordinary shares—all of 300 francs [= \$57.90] each, and aggregating 6,000,000 francs. The dividends were 30 francs per share of the preference and 50 francs per share of the ordinary stock, the rate on the latter amounting to 16½ per cent. The dividends aggregated 927,740 francs [= \$179,053.82]. After the customary writing off for depreciation, legal reserves and compensation of the administration, the amount carried over was 9,452,89 francs. The 300 francs shares were quoted recently at 867 for the ordinary and 530 for the preference. The report covers the operation of the company's factories at Langlee (France) and Manheim (Germany), both of which are devoted to the production of rubber footwear and tires. The rate of dividend has remained the same for six years, during which time 3,950,508 francs [= \$762,448.04] have been distributed to shareholders. Meanwhile the capital has increased from 4,000,200 to 6,000,000 francs.

JAMES ROBINSON—OBITUARY.

THE death of James Robinson is reported by *The India-Rubber Journal* as having occurred on July 3. He was born in July, 1850, and at various times was connected with several important rubber goods manufacturing companies. For a number of years he conducted the affairs of Broadhurst & Co., Limited, manufacturers of waterproof goods and mechanicals at Bradford, Manchester, until the company was reconstructed and came under the control of different directors. He was afterward connected with G. W. Laughton & Co., Limited, Manchester. The funeral on July 6 was attended by many friends, including numerous members of the rubber trade. Mr. Robinson at one time, as representative of Broadhurst & Co. in the India-Rubber Manufacturers' Association, was a member of the general committee of that body, and for a year was vice chairman. He was for quite a while a

member of the Manchester city council. He was also a prominent member of the Masonic fraternity.

NEW BRITISH COMPANIES REGISTERED.

THE Consolidated Rubber Co., Limited, registered July 5, 1909, with £164,000 [= \$798,106] capital. The object is to take on the manufacture of Heinemann's "synthetic rubber," as reported in the last INDIA RUBBER WORLD.

Gavan Inrig, Limited, registered July 6, 1909, with £2,000 [= \$9,733] capital, to acquire the business of G. Inrig, of London, and work the patents granted to him for continental Europe, the United States, and Canada, and carry on the business of manufacturing rubber substitutes and insulating materials.

Progressive Rubber Co., Limited, registered July 7, 1909, with £10,000 [= \$48,665] capital. To acquire licenses to manufacture under certain patents from the Rubber Patents, Limited, and to arrange with A. G. Spalding & Brothers for the manufacture of sporting goods, rubber heels, tires, and the like. [For a report on the business of Messrs. Spalding & Brothers (an American company) in England see THE INDIA RUBBER WORLD, January 1, 1908—page 127.]

Segment Motor Rim Co., registered July 30, 1909, with £25,000 [= \$121,662.50] capital. To acquire the benefit of certain existing inventions referred to in an agreement with J. W. Hall and C. Baynes.

Star Band Syndicate, Limited, registered July 6, 1909, with £550 [= \$2,676.57] capital. To acquire certain patents relating to non slipping tire treads from C. H. Stotesbury and T. P. Reid, and turn them to account.

Roussillon Tyres and International Rubber Co., Limited, registered July 6, 1909, with £200,000 [= \$973,300] capital. To arrange with P. Roussillon for the purchase of a French tire patent and with G. Filleul-Brohy for French patents on a tire machine and to manufacture tires. Registered offices: Finsbury house, Blomfield street, E. C., London.

LABOR SITUATION IN SWEDEN.

THE wage scale agreement between the Helsingborgs Gummi-fabrik and its workmen expired on July 1. The works were, however, closed previous to that date, on June 24, for necessary repairs. The negotiations resulted in the reopening of the works on July 14, but at the noon hour of the same day the men quit work, stating that their delegates and the negotiating committee had closed the new agreement on terms of which they were unable to approve. Peace was nevertheless made very quickly, inasmuch as the workmen decided on July 20 to return to work on the terms of the old agreement.

ITALY.

"THE enormous advance in the prices of crude rubber has compelled the Italian rubber goods manufacturers to raise their selling prices considerably, the advance amounting in some cases to as much as 30 per cent.," says the *Gummi-Zeitung*. Moreover, firm offers are being made only for prompt acceptance—i. e., for acceptance by return mail. Selling prices fluctuate from day to day, but always in an upward direction in accordance with the crude rubber quotations.

AUSTRIA.

THE Austrian rubber goods manufacturers have yielded to the peremptory demands of the market, by announcing for the present an advance of 10 per cent. in their selling prices. This advance has been in force since July 1, in the form of an addition to the total amounts of all invoices. The circular jointly sent out by all the manufacturers provides for a future definite settlement of prices.

The India-Rubber Trade in Great Britain.

By Our Regular Correspondent.

A FEW months ago I referred to this topic in connection with a new advertisement showing the advantages of buying low-grade rubbers, washed or semi-washed. Though the name does not appear in the advertisement, I understand that the Murac Syndicate is running the new business.

RUBBER WASHING FOR THE TRADE.

In my previous comments I referred to the conservatism of the average rubber manufacturer who likes to see his high-grade rubbers in the rough, so to speak, so as to be certain of their identity. How far this desideratum will effect the fortunes of the latest venture I do not care to predict, but that it will not prove entirely fatal seems clear from the success that has followed a similar business founded a few years ago. I refer to the rubber-washing works carried on by Eyre & Co. at the Meadow Mills, Greenfield, Holywell, North Wales, of which W. J. Eyre is the controlling spirit. Mr. Eyre has had over fifty years' connection with the rubber trade, mainly in the branch of raw rubber and rubber brokerage, and a good many years ago he started purifying low grade and in some cases undesirable rubbers, so as to render them more attractive to the manufacturer. Six years ago, owing to the extension of the business, it was mostly transferred from Liverpool to Holywell, the premises taken over being an old copper rolling mill. The rural surroundings of the mill are delightful, but its main business attraction is a large mill dam, 25 feet deep and a water wheel of 45 feet diameter. This wheel actuates all the washing rolls and other machinery at a total yearly cost of the oil for its lubrication. Owing to the extension of the business new washing rolls are shortly to be installed, to be driven by the same wheel. Fine rubber is not washed, the bulk of the work being done on low-grade, sandy and resinous rubbers. As a rule, the company buys the raw rubber in the market and sells it to the rubber works where washed, though in some cases the manufacturers send their rubber to be washed on terms. The drying chambers are heated by steam pipes, a current of hot air being also used.

ACCORDING to the statements made at the third annual meeting, held on July 9, in London, the outlook is not yet as bright

LIBERIAN RUBBER CORPORATION.

as the shareholders wish. Inter-tribal warfare appears to be answerable for a lower yield of rubber than was expected. From what Sir Harry Johnston said it seems that the indigenous *Funtumia elastica* has not taken at all well to plantation, and it has been discarded in favor of *Hevea*. Until the plantation of the latter comes into bearing the position of the Corporation clearly depends very largely upon the maintenance of the present high prices for raw rubber. With Pará at 3 shillings the native Liberian rubber can only find a market at prices which will be found unremunerative. Of course, there is this to be said for the future—it may be taken for granted that an improvement will be effected in the methods of preparation and that the very objectionable smell which has militated against the use of this rubber in the past will not be so conspicuous in the future.

I HAVE read with much interest the articles on this subject recently contributed to THE INDIA RUBBER WORLD by Mr. H. O.

DERESINATION OF INDIA-RUBBER.

Chute. The general conclusion one comes to from the figures he has given is that the process will pay if about 3 shillings per pound can be obtained for the rubber, but he doesn't say anything about the quality of the rubber which has been deresinated. A good deal will also depend upon the rubber market.

I note that the solvents he suggests are methyl and ethyl acetates instead of acetone. Of course, the proposal to get pure rubber from Pontianak gum is by no means new. More than one plant for the purpose has been erected in England and abandoned for one reason or another. In case of the most important one, I understand, a market could not be obtained for the rubber, one reason being because of the poor quality of the deresinated rubber.

Pontianak is estimated to yield 10 per cent. of rubber, but analyses show it contains much less than 10 per cent. The material that comes to England is usually very wet, containing 50 or more per cent. of water. Moreover, the amount and quality of rubber varies considerably. At Liverpool there is a rooted objection to calling in the aid of chemical analysis in judging the value of Pontianak, but in buying for a deresinating plant, analysis would appear to be highly desirable.

What Mr. Chute says as to the difference between resin and rubber resins is by no means superfluous, as a good deal of ignorance seems to prevail on the point. The great physical difference between the resins found in various brands of rubber must also be matter for consideration in connection with the prospective use of deresinating plants. It is interesting to hear that some quantity of Pontianak resin has found appreciation in the varnish manufacture, though there is nothing attractive about the price. Nor is there any evidence that much larger quantities could be easily absorbed.

It is more than 25 years since efforts were made in England to find a market for the potato rubber, or Almeida rubber resins, but with entirely negative results. Altogether having regard to the abundance and low price of natural rosin or colophony, I quite agree with what Mr. Chute says as to the blank outlook for rubber resins as a source of profit. Details as to its chemistry are given but there is an absence of information as to the particular demand it is intended to meet.

Mr. Chute referred very casually to the deresination of gutta-percha in England. This has long been carried out on a large scale at the various submarine cable works and golf ball factories. The solvent most ordinarily used is light petroleum spirit. This so called hardening process is necessary for the manufacture, and the question of cost has not formed such an important item as would be the case in deresinating rubber to sell in the open market, though, of course, the plants are operated as economically as possible.

ONE may be excused for further reference to this topic, as it is such an all-absorbing one at the present time. By the tone of the editorial in the July issue of THE INDIA RUBBER WORLD it is clear that the writer goes no further than the

THE PRICE OF RUBBER.

ordinary law of supply and demand to account for the great rise. Personally, I have no direct information to prove the contrary, but, as I said last month, other ideas are widely held. The other day I interviewed one of our most prominent rubber manufacturers on the situation, which he admitted was a very embarrassing one for the trade. His opinion was that the great rise in price was due to a "corner," and he said that there was nothing whatever in the trade demand for goods to warrant the rise. He scouted the idea of the increased use of the taxicab having anything to do with it. Of course, there is a somewhat new feature that the old-established British firms may possibly have overlooked or minimized, and that is the greatly increased demand from other countries, which of late years have become manufacturers. Leaving out of account America, which has, of course, largely increased its purchases, most of the

Continental factories are taking more, and then there is Japan, which is now manufacturing on quite a large scale. As long ago as last September I was told in the city that there was going to be a big "boom" in rubber shares, and though it was some time in coming, we have certainly got it at last, and half the people you meet are now discussing rubber shares. No doubt, as in the original Kafir boom, a good many who go in at the high prices merely for a gamble will get bitten, a fact which, of course, says nothing for or against the stability of the various companies.

THE RUBBER TRADE AT AKRON.

BY A RESIDENT CORRESPONDENT.

FIRE destroyed one of the three main buildings of the plant of the Buckeye Rubber Co. here, on August 12. Mr. S. S. Miller, the general manager, believes that insurance adjusters will find that the loss exceeded \$100,000, and may have reached \$150,000. The fire was discovered in a room used to store tire fabric above the office, at 4 o'clock in the morning, by a night watchman. It is supposed to have originated from crossed wires. Before the city fire department could get its lines laid the flames had spread over the greater part of the interior. Large quantities of crude and partly compounded rubber, and also other raw materials stored in the building, were totally destroyed, constituting the greater part of the loss. The building was used for the offices, for the mill room, and for storage. Employees of the factory were immediately put to work to clear up the debris. Mr. Van H. Cartmell, of New York, president of the company, who came to Akron the day following the fire, says that the building will be rebuilt at once. A small mill room in another building will be used temporarily. C. W. Seiberling, vice president of the Goodyear Tire and Rubber Co., offered the use of the Goodyear mill room immediately after the fire. Mr. Miller says that the company will be able to continue manufacture without serious delay to orders.

The Buckeye Rubber Co. was incorporated in 1900, under the laws of New Jersey, to manufacture tires for the Consolidated Rubber Tire Co. (New York), whose products before that date were made for them at various rubber factories under contract. The loss occasioned by the fire is fully covered by insurance. The total insurance carried on the plant and stock was \$380,000.

A second fire broke out in the Buckeye factory three days later, on the morning of August 15. The source, like that of first blaze, was mysterious and incendiarism was suspected. It originated in the storage house adjoining one of the remaining factory buildings. Large quantities of crude rubber, Pontianak gum, and lumber were destroyed, as well as valuable patterns. Automatic fire doors prevented the spreading of the blaze to the engine room, and firemen kept the adjoining factory building from catching fire. The loss in the second disaster was estimated at \$20,000.

WHAT promises to be a development of great importance in the automobile world is the introduction of the tire-making machine. The B. F. Goodrich Co. and the Goodyear Tire and Rubber Co. are now making practical use of such machines for the manufacture of their best grades of pneumatics. The Goodrich machine was designed by the company's mechanical expert, John Gammeter. Mr. E. C. Shaw, general manager of the Goodrich works, said that 30 of these machines have been installed, each producing an average of 100 tires in a day of 21 hours. Each machine can be operated by "one and a fraction" men. By the old process of making tires by hand, a good workman could seldom average more than six tires in a day. The Goodyear company have six machines in operation, each operated by two men. An official of the company said that these machines are capable of making 160 tires each in a day of 24 hours.

The Akron Pneumatic Tire-Making Machine Co. was organized during the last month to manufacture and sell a tire-making machine designed by A. C. Squires and J. W. Meeker. The directors of the company are Charles A. Ley, president; James W. Meeker, secretary and manager; M. B. Kuhlke, vice president; E. T. Williams, and A. C. Squires. The capital stock is \$10,000. Several of the machines are now being built in an Akron machine shop.

The Moore Architectural Engineering Co., of Akron, are preparing plans for three new buildings for the Faultless Rubber Co. at Ashland. They will cost more than \$100,000, and will increase the floor space of the factory more than 21,500 feet. The buildings will adjoin the present plant and will nearly double its capacity.

THE United Rubber Co. is the name of the reorganization of the Aladdin Rubber Co., of this city. The business is in practically the same hands as before, and the capital stock has been reduced from \$250,000 to \$200,000. The officers are: James Christy, president; J. W. Miller, vice president; Sidney Conner, secretary and treasurer, and William W. Wildman, general manager. The reclaiming plant at Barberton, Ohio, will be retained, and it is the intention of the directors to build a factory for the manufacture of mechanical rubber goods in the spring.

THE plants of The B. F. Goodrich Co., the Alkali Rubber Co., and the American Hard Rubber Co., were shut down all day August 7 on the occasion of the annual Goodrich picnic, which was held at Silver Lake, Ohio. The company gave away free tickets to 15,000 people for the outing. It was the largest ever held by the Goodrich. The Diamond plant was closed on July 24, when more than 8,000 persons were entertained by The Diamond Rubber Co. at Silver Lake.

THE remainder of the \$200,000 worth of capital stock of the Swinehart Clincher Tire and Rubber Company has been sold, and James A. Swinehart has sold a large part of his stock to William W. Wuchter, formerly superintendent of the Firestone Tire and Rubber Co.'s plant. Mr. Wuchter has succeeded J. A. Swinehart as general manager and replaces B. C. Swinehart as vice president. J. A. Swinehart will continue as president of the company, but will retire from active participation in the manufacture. He was due to sail for England August 29, it being his plan to devote his attention to the European interests of the company in that country and on the Continent. This will necessitate his removing his family abroad. At a directors' meeting held on August 23, the personnel of the board was almost entirely changed. All retired except J. A. Swinehart and J. O. Surbey, and five new men were elected—Frank B. Theiss, first vice president of the First National Bank of Akron; William Byrider, William W. Wuchter, Joseph Dangel, superintendent of the Akron plant of the American Hard Rubber Co., and R. A. May, all of Akron. C. O. Baughman will be retained as secretary and most of the old employees will be continued in their present positions. Work has already been started on the construction of an addition to the plant, made necessary by the increasing demand for the company's product. The directors are also considering the question of adding pneumatic tires to the output of the plant.

A RECENT rumor to the effect that the Aluminum Flake Co. was about to change hands arose from a proposition made by Cleveland persons, who, according to Mr. Frank Reifsnider, manager of the company, offered par for the stock as a part of a proposed reorganization scheme. Mr. Reifsnider said that the directors had decided not to take up the plan and would continue as heretofore. According to the manager's statement, the company has enjoyed prosperous business so far this year, hav-

ing nearly doubled its sales. Between January 1 and August 13, 984,768 pounds of aluminum flake were sold. Large shipments have recently been made to the company's agent in Germany, for distribution in Europe.

* * *

A SERIOUS threat against the life of Frank H. Mason, vice-president of The B. F. Goodrich Co., resulted in the arrest early in August of a negro named Earl Jackson, who had been working for Mr. Mason in his garage. Mr. Mason received two notes in which sums as high as \$2,000 were demanded with a threat against the recipient and his family.

* * *

OPERATIONS were started in the new plant of the Falls Rubber Co., at Cuyahoga Falls, Ohio, on Monday morning, August 16. The force at the start consisted of 30 men. The buildings in which the factory is located were formerly occupied by the Superior Rubber Co. Considerable new machinery has been purchased. The products will be automobile and bicycle tires and pressed horseshoe pads.

* * *

Good authority is claimed for a report to the effect that the International Harvester Co., who manufacture auto buggies and automobile runabouts in Akron, are planning to install a department in the Akron plant for the manufacture of solid and pneumatic tires. Akron officials of the company, however, give emphatic denial to the story.

* * *

AKRON rubber companies note with considerable gratification a decided increase in the demand for mechanical goods and the corresponding growth of activity in this department of rubber manufacture. In the B. F. Goodrich factory night forces have recently been put on in several of the departments for the manufacture of mechanical molded goods. The growing demand for this class of goods as distinguished from the perennial demand for automobile tires is taken by the manufacturers as an indication of a general activity, especially in sugar refining and in other industries in which rings, gaskets, hose, and other factory supplies made of rubber are needed.

THE RUBBER TRADE IN SAN FRANCISCO.

BY A RESIDENT CORRESPONDENT.

REPORTS heretofore regarding improvement in trade conditions have been colored more or less with suggestions showing that for the past two years the rubber business has been going along in a very quiet manner, with very little turn for the better during all that time. Now, however, there are unmistakable signs which indicate that the effects of the financial panic have entirely worn away and that the improvement in business is permanent and substantial. This is not only the case among the rubber establishments, but is true in all lines of business, and there is no longer any doubt that normal conditions are being restored and the merchants are on the verge of a prosperous season. It is true that the improvement during the past month has been but slight, in the face of the advanced prices on rubber, but it has been so general that there is no question of its genuineness.

* * *

A PLAN is on foot to reorganize the Mechanical Rubber Goods Association of the Pacific Coast, and a meeting of the rubber trade has been called to see what can be done about it. Before the fire of 1907, the members of this association, about once a month, met at informal luncheon or dinner, enjoying a social time and, after the repast, a discussion of matters of interest to their trade, with a view to abolishing common evils. During the period following the fire, when all of the rubber establishments were reorganizing their business, there was little time or use for an organization, but now a number of the dealers

think that it may serve a useful purpose, and some fourteen or fifteen houses have signified their willingness to reorganize. The object will be to correct abuses in regard to guarantees, ratings, terms and the like, but has nothing to do with prices. This association has nothing to do with the Construction Club, which is now being organized, and which a number of the rubber dealers have signified their intention of joining. The Construction Club intends to embrace among its members business men engaged in the lines of ordinary mechanical construction business, and so includes the rubber houses. It is purely a social club, and will be operated on the same plan as the Hardware Club of New York.

* * *

MR. R. H. PEASE, president of the Goodyear Rubber Co., has returned from a three weeks' trip to Portland, Seattle, and Spokane, and says that he found business, especially in Portland, much better than it has been for several years. Mr. R. H. Pease, Jr., drove up to Portland in his automobile, and returned with his father. "Our business in San Francisco," said Mr. Pease, "ran along quietly enough through July, but has been increasing this month, and we have more orders for later on than for several years at this time. The outlook is favorable, and as soon as the mills start up we look for a good mechanical business."

* * *

THE Bowers Rubber Works have just received their third large contract from the Isthmian Canal Commission for dredging sleeves, to be used on the Atlantic side. This firm's output is now being used on both the Atlantic and Pacific sides. Mr. Bowers gave his employes their second annual picnic during the month, which included all of the factory hands at Black Diamond. He chartered a boat, which was well filled, with 250 on board, the employes and some of their friends, and made a cruise up the river. Mr. Bowers furnished a band and lunch and everything necessary for a picnic, including prizes for the winning team of the two baseball teams from the factory.

* * *

MR. W. J. GORHAM, of the Gorham Rubber Co., will return from a fishing trip at about the end of this month, and then plans to make a trip to the East. Mr. Sargeant, manager of the firm, states that business is getting good, and that there is a tendency for a raise in prices in all lines.

MR. P. T. SPRAGUE, who works the water front with his rubber supplies, states that the handling of the fruit crop is creating great activity with the river boats on the bay, although just now there is little activity among the lumber schooners and the big deep-water vessels.

MR. A. H. GREGORY, manager of the local branch of the New York Belting and Packing Co., Limited, at No. 129 First street, states that for the first time in two years the dealers can say that there has been an actual and substantial turn for the better in the trade conditions.

THE Continental Tire Co., which has been temporarily located out on Van Ness avenue, will move down about September 1, and occupy quarters at No. 543 Market street.

THE Pacific Mill and Mine Co., on Mission street, near First, report that they are selling lots of belting and that business can be said to be fairly good.

MR. ALEXANDER, with the Plant Rubber and Supply Co., states that business is now very good, and that indications point to a prosperous season.

THE Revere Rubber Co. are moving into their new quarters, No. 543 Market street.

THE projected railway from La Paz, Bolivia, to the Pacific coast, for which a contract has been awarded to the firm of Sir John Jackson, Limited, of London, to cost \$15,000,000, will afford an additional outlet for a region rich in rubber.

SINGLE TUBE TIRES IN COURT AGAIN.

THE infringement suit, in relation to the Tillinghast tire patent, of The Single Tube Automobile and Bicycle Tire Co. v. Continental Rubber Works (Erie, Pennsylvania), pending since November, 1904, has resulted in a decision for the plaintiff, filed August 7 in the United States Circuit Court for the Western District of Pennsylvania, having been rendered by Judge Buffington.

The defense of the Continental company rested in part upon the publication by A. Boothroyd, in England, in December, 1890, of the idea of a single tube bicycle tire. But the court decided that, whereas the application of Pardon W. Tillinghast for a patent was a later date, "as early as July, 1890, Tillinghast had a clear conception of his pneumatic bicycle tube embodying the elements of his second claim," and that prior to September in the same year he had disclosed the same to credible witnesses. The merits of the Tillinghast claim have already been passed upon twice in the United States circuit courts in different jurisdictions, and Judge Buffington in the present case did not see his way clear to depart from the theory on which the preceding decisions were based. It was divulged that the Continental Rubber Works prior to the latest decision had made about 1,250,000 tires, and all of these, under the decision infringe the Tillinghast claim. As the royalty demanded by the complainant from its licensees is 5 per cent., with 15 cents per pair minimum, the amount of damages involved make a considerable sum. The Continental Rubber Works have given notice of their intention to file a sufficient bond and appeal from the decision. The patent in question expires May 23, 1910.

The patent in question is No. 497,971, and the language of the claim which is the basis of the present action:

2. A pneumatic tire, composed of a rubber tube, an intermediate layer of fabric, and an outer covering of rubber, substantially as described, having all its rubber joints and component parts simultaneously vulcanized together, forming an integral annular tire.

The history of the Tillinghast patent recalls the connection with it of Colonel Albert A. Pope, whose death during the past month is reported elsewhere in this paper. The Pope Manufacturing Co., then owning the Hartford Rubber Works, purchased the Tillinghast patent in 1905, with a view to using the "single tube" tire on their bicycles, and other manufacturers paid a royalty to Colonel Pope, the patent ultimately forming the basis of the present corporation, The Single Tube Automobile and Bicycle Co. The energy and capacity displayed by Colonel Pope in this connection, involving his development of the bicycle for popular use, and his propaganda for good roads—such as bicycles could be used on—justifies the assertion by *The Bicycling World* that "it gave us the pneumatic tires, now so necessary to physical comfort and well being." The other forms of pneumatic tires now popular came later; the idea is that the Tillinghast tire "blazed the way."

TIRES IN THE AMERICAN IMPORT TRADE.

THE advance in the rate on imports of india-rubber goods in the new American tariff act doubtless has been made in view of the extent of the trade in imported automobile tires. At one stage of the tariff discussion it was proposed to class tires as "parts of automobiles," under which head there have been attempts made to class them in the customs administration in the past [see *THE INDIA RUBBER WORLD*, April 1, 1909—page 256], but this proposal did not find favor. Finally, tires were

left without being specified, but it clearly was the idea of the Congress to lump them with rubber goods, the rate on which is advanced from 30 to 35 per cent. *ad valorem*.

Imports of rubber goods into the United States are classified only to a certain extent. Separate account has been taken of hard rubber goods, but these have not come in in largely increased quantities during 10 years. The average has been only about \$191,000 per year, and the arrivals in 1908 were only \$293,000. The total increase in the imports of rubber goods has been at a much higher rate, however, and it is to be noted that the increase has been most largely in imports from Germany and France, the countries supplying most of the rubber tires imported into the United States. In the table on this page is shown the total amount of imports of rubber goods for ten fiscal years (ending June 30), and the countries of origin. It will be seen, by the way, that the imports from France and Germany are declining at a greater rate than the total imports of rubber goods.

In connection with the table may be considered the value of rubber goods imported during the fiscal year ended June 30, 1909, which was only \$1,301,770. It is not possible yet to state whence the imports for this year came.

A BRAZILIAN VIEW OF RUBBER PRICES.

[FROM "THE BRAZILIAN REVIEW" (RIO), JULY 27.]

RUBBER prices have boomed up to 6s. 4d. per pound, a rate evidently too high to be long maintained, because it is certain to affect consumption and so reduce demand, apart from the action of speculation, which, with previous records already left far behind, cannot hope to push prices much higher, but has everything to gain by putting them down.

In fact, rubber prices, subject to the general relation of supply to demand, are controlled by a few big German, English, and American houses. Under the influence of the American crisis, prices were driven down from 5s. 2d. in January, 1907, to 2s. 3d. per pound on February, 1908. Then when the great houses bought up all the stock at ruinous rates the reaction set in that has carried prices back and over 6s. 4d., the highest ever known. It is impossible to believe that all this is the unaided result of increased consumption. Consumption was never bigger than at the beginning of 1907, previous to the American crisis, and yet prices fell steadily from 5s. 2d. in January to 4s. 4d. in July, before any crisis was heard of.

It would be equally difficult to believe that the present high prices are the result only of economic factors. In all probability, as soon as big holders have unloaded and see that nothing more is to be got by pushing prices high, they will unload and there will be a sharp decline. It would, therefore, be unwise, in our opinion, to count on the continuation of present prices.

A COMPARISON of the profits of cinchona culture with rubber growing is contributed by Charles Böhlinger to *Der Tropenpflanzer*. Dealing with 32,000 acres devoted to cinchona, he figures out an average yield of 394 marks [= \$93.30] per acre. Again, dealing with the yield of a number of rubber plantations, he arrives at an average yield of 224 pounds per acre, which, at an average selling price of 10 marks per kilogram [= \$1.08 per pound], gives 1020 marks [= \$242.76] per acre. But very much better returns for rubber have been reported since Mr. Böhlinger's article was written, while cinchona has remained at practically the same figures.

IMPORTS OF MANUFACTURES OF INDIA-RUBBER INTO THE UNITED STATES, WITH THE COUNTRIES OF ORIGIN, FOR TEN FISCAL YEARS, ENDING JUNE 30.

FROM.	1899.	1900.	1901.	1902.	1903.	1904.	1905.	1906.	1907.	1908.
France	\$81,862	\$98,590	\$121,217	\$110,850	\$129,632	\$167,911	\$332,250	\$720,276	\$825,399	\$539,480
Germany	106,161	163,942	182,442	197,608	308,551	427,917	827,452	660,086	1,028,746	737,278
Great Britain.	178,788	291,647	150,097	113,589	132,768	117,709	115,208	124,798	193,468	333,543
Other	12,498	9,900	24,907	27,709	95,021	108,025	114,064	187,254	215,169	346,289
Total	\$378,209	\$564,088	\$478,663	\$449,756	\$665,972	\$821,562	\$1,389,064	\$1,092,413	\$2,262,782	\$1,956,590

News of the American Rubber Trade.

APSLEY RUBBER CO. BUSY.

THE Apsley Rubber Co. (Hudson, Massachusetts) were reported as working at full ticket, and not likely to shut down for inventory and repairs. The Hon. L. D. Apsley, president of the company, has been lately in the West, going as far as Seattle, where are the coast headquarters of the Rubber Manufacturing and Distributing Co., of which he is also president. The Rubber Manufacturing and Distributing Co. have organized a fine display at the Glove and Leather Market Fair, in Chicago.

STAMFORD INDUSTRIES.

THE *Daily Advocate* of Stamford, Connecticut, issued recently a triennial industrial edition which is not only a most creditable publication, but makes a good showing for the leading industries of Stamford. The rubber branch is represented by The Stamford Rubber Supply Co., manufacturers of rubber substitutes, and The Atlantic Insulated Wire and Cable Co. The Rutherford Wheel Co., manufacturers of steel wheels for automobiles, are also located in Stamford, and a considerable business is done in that city in automobile tires.

CONSUMERS' RUBBER CO. ENLARGING.

THE growth of business of the Consumers Rubber Co. (Bristol, Rhode Island) has led the proprietor, Mr. Terrence McCarty, to purchase additional ground adjacent to the property, on which he intends erecting a new building for factory purposes. The wire insulating plant is to be enlarged, with a view to meeting the demand for larger-sized insulated cables than have been made at this plant hitherto. The footwear factory has been producing 2,400 pairs daily of late.

WESTINGHOUSE ELECTRIC PROFITS.

THE annual report of the Westinghouse Electric and Manufacturing Co. for the year ended March 31, 1909, points out that the affairs of the company were taken out of the hands of the receivers December 5, 1908. Manufacturing operations were carried on under the receivership without cessation, though on a smaller scale. Gross earnings were \$20,606,592.04, against \$34,175,548 two years previous. The net manufacturing profits were \$650,783.53, and other income (from royalties, etc.) brought the total income to \$1,066,258.65. Deducting interest, and \$513,316.14 for depreciation of plant, there was, instead of a net income, a deficit of \$918,682.91. The report says: "While there has been a decided improvement in the business of the company since the beginning of the year, it has not yet nearly reached normal proportions, although the outlook and inquiries indicate that in the near future the full capacity of your various works will be required to meet the demand." The financial report states the surplus on March 31, 1909, at \$8,980,324.69, against \$12,595,151.67 March 31, 1907.

IMPROVED ACTIVITY OF GENERAL ELECTRIC.

THE General Electric Co. were reported early in the last month to be giving employment to about 25,000 persons. At the high point of the company's business in 1907 the number of employes had reached about 31,000, but following the depression the figure fell to about 19,000. The increase in the number of employes has been gradual, keeping pace with the slow but constant improvement in sale. It is estimated that the number of employes will be increased to 30,000 within a year.

AMERICAN MOTOR CABS.

THE *India-Rubber Journal* says: "We learn that our American cousins are about to place upon the roads in the chief cities in the States, motor cabs of home manufacture, which will mean increased demand for rubber tires, which at the lowest computa-

tion means 20s. a week per vehicle for tires alone—£52 a year. A similar development is also expected in the old country in other towns, so that there should be a big increase in the demand for tires and a similar increased consumption of rubber."

UNITED STATES RUBBER CO.'S ISSUES.

TRANSACTIONS on the New York Stock Exchange for four weeks, ending August 21:

COMMON STOCK, \$25,000,000.

[Less \$1,334,000 in treasury of a subsidiary company.]

Last Dividend, April 30, 1900—1%.

Week July 31....	Sales 3,700 shares	High 42	Low 38½
Week August 7.	Sales 31,220 shares	High 47½	Low 42
Week August 14.	Sales 48,525 shares	High 53	Low 45
Week August 21.	Sales 65,743 shares	High 57½	Low 50
For the year—High, 57½, Aug. 19; Low, 27, Feb. 24.			
Last year—High, 37½; Low, 17½.			

FIRST PREFERRED STOCK, \$36,263,000.

Last Dividend, July 31, 1909—2%.

Week July 31....	Sales 2,250 shares	High 117	Low 116½
Week August 7.	Sales 6,170 shares	High 119	Low 117
Week August 14.	Sales 10,620 shares	High 120¼	Low 117
Week August 21.	Sales 5,070 shares	High 120¼	Low 118½
For the year—High, 120¼, Aug. 14; Low, 98, Jan. 29.			
Last year—High, 108; Low, 76.			

SECOND PREFERRED STOCK, \$9,965,000.

Last dividend, July 31, 1909—1½%.

Week July 31....	Sales 410 shares	High 83¾	Low 83
Week August 7.	Sales 6,245 shares	High 87	Low 84
Week August 14.	Sales 4,935 shares	High 88½	Low 86
Week August 21.	Sales 2,150 shares	High 88¼	Low 86½
For the year—High, 88½, Aug. 14; Low, 67½, Feb. 25.			
Last year—High, 75½; Low, 42.			

SIX PER CENT. CERTIFICATES, \$20,000,000.

[\$15,000,000 issued.]

Week July 31....	Sales 27 certs.	High 105¾	Low 105¼
Week August 7.	Sales 78 certs.	High 105½	Low 105
Week August 14.	Sales 27 certs.	High 105½	Low 105
Week August 21.	Sales 75 certs.	High 105½	Low 104¾

* * *

THE New York *American's* review of Wall Street for the week ending August 21, a period of much activity in stocks, says: "One stock strong throughout the excitement was United States Rubber common. This stock is to get a dividend at the rate of 4 per cent., the initial payment to be announced in October, at the latest, and perhaps at the regular meeting to be held September 16. There is a party of directors opposed to this dividend, but it is suspected that they have sold out their shares and would like to repurchase before the action that the most influential directors have announced will be taken."

On the contrary, the *Boston News Bureau* reports: "A leading director of the company says: 'The matter of starting dividends on the \$25,000,000 common this year has not been considered by the board and is not likely to be. It is entirely too early to talk common dividends. We have had a good year and are earning a substantial surplus for the common, but directors will go slow in paying out these earnings as dividends when they can be utilized to better advantage in the property.'

"The nearness of dividends on Rubber common depends entirely upon the continuance of good earnings. With another year as good as the one through which the company is now passing common dividends would be fairly certain, and if the outlook favored a third year of substantial earnings, would be practically assured."

The latest quotations are 51¼ for common and 118½ for first preferred.

MORGAN & WRIGHT BRANCHES.

MORGAN & WRIGHT (Detroit, Michigan), who have been represented at Atlanta, Georgia, by the Alexander-Seewald Co., have opened a branch at No. 50 North Pryor street, under the management of Herbert Starnes, one of the oldest employes of the company, who has acted as their representative in the states of Kentucky, Tennessee, Mississippi, and Alabama for several years. The Morgan & Wright branch at Los Angeles, California, on September 1 removes to more commodious quarters at No. 1108 South Main street, where they will have better facilities for taking care of the trade.

PLYMOUTH RUBBER CO.—FACTORY EXTENSION.

The Plymouth Rubber Co. are building an addition to their factory at Stoughton, Massachusetts, on account of the pressure of business, as a temporary means of taking care of their orders. They will, however, soon start erecting new factory buildings on their property recently purchased at Canton, Massachusetts [see *THE INDIA RUBBER WORLD*, July 1, 1909—page 367], where they have over 70 acres of land, several hundred horse power in water, and superior facilities for shipment by rail. The company are doing a large amount of business in high-grade single and double textile goods, producing some of the very best results in feather-weight waterproof work.

NEW RUBBER CEMENT BUSINESS.

PAUL VAN CLEEF has started the manufacture of rubber cements at No. 1145 Seventy-sixth street, Chicago. On July 1 he purchased the rubber cement plant of Eugene Arnstein, Inc., in bankruptcy [see *THE INDIA RUBBER WORLD*, July 1, 1909—page 366]. Mr. Van Cleef was formerly the superintendent and chemist of the Arnstein factory, most of the equipment of which he has removed to the premises above mentioned. He has secured the right to use the Arnstein brands for cements for the shoe factory and shoe findings departments.

NEW YORK TAXICAB RESULTS.

At the third annual meeting of the New York Taxicab Co., Limited (London, June 29), the chairman stated that the gross operating profit of the New York taxicab service during the year 1908 had been £42,000, in spite of various untoward circumstances. The loss estimated to have been sustained through the strike of the employes was £50,000. The failure of their bankers caused a direct loss of £17,000, besides causing temporary financial difficulties. Owing to the circumstances mentioned the company have not yet increased the number of cabs to 700—the number planned. The garage recently completed for the company in New York cost £80,000.

MOTORING ACCIDENT TO MR. WATSON.

The near escape of Mr. John J. Watson, Jr., of the American rubber trade, from a serious fate while motoring in France, was the subject of a cable dispatch in the *New York American* of August 15. It said:

"Mr. and Mrs. Watson were touring through the south of France. Between Toulouse and Villefranche, while descending a steep hill with a precipice on either side, the steering gear of the machine broke and the brakes refused to work. Fortunately, for them, the machine kept on a straight line, then it swerved and when on the verge of the precipice and just as it was dashing over the side into certain destruction, the front wheel was caught by the dustpan and the car stopped. It was a most miraculous escape. The occupants were shaken up and frightened, but uninjured."

Mr. Watson is treasurer of the United States Rubber Co. and president of the Rubber Goods Manufacturing Co. and of the General Rubber Co.

ST. PAUL TROPICAL DEVELOPMENT CO.

The *State Journal*, Lincoln, Nebraska, publishes a report on a visit of several citizens of that place, who are investors in

this company, to the company's plantation "Rosario," on the isthmus of Tehuantepec, in Mexico. They formed a favorable opinion of the growth of the rubber and cacao. The company is incorporated under the laws of Delaware and its head office is at St. Paul, Minnesota.

TRADE NEWS NOTES.

The directors of the Boston Woven Hose and Rubber Co. declared a quarterly dividend of \$2 per share on the common stock, payable September 15, 1909, to stockholders of record September 4. A semi-annual dividend of \$3 per share on the preferred stock was payable June 15.

The Jenkins Rubber Co. (Elizabeth, New Jersey), are putting in some new boilers and making other improvements at their factory, which is a branch of the business of Jenkins Brothers (New York), manufacturers of packings.

Hugo Michaelsen, of Copenhagen, Denmark, who has done an important business with the rubber trade on the continent in supplying manufacturers with raw materials, is opening a branch office in Berlin. Mr. Michaelsen will be visiting the United States this month and may be communicated with in care of M. Ruttenau, No. 24 Stone street, New York.

PERSONAL MENTION.

Mr. PHILIP H. LOCKHART, chairman of W. & A. Bates, Limited, rubber manufacturers, at St. Mary's Mills, Leicester, England, and a director in The India-Rubber Manufacturers' Association, was a visitor to the United States during the month.

Mr. George M. Allerton, of the Seamless Rubber Co. (New Haven, Connecticut), who was recently seriously ill, at last accounts was recovering satisfactorily and hoped speedily to resume business.

DR. PINTO'S SMOKELESS RUBBER.

RUBBER obtained by the smokeless process of Dr. Carlos de Cerqueira Pinto, of Pará [see *THE INDIA RUBBER WORLD*, August 1, 1909—page 396], has been submitted to a number of manufacturers in the United States during the past month, and without exception with favorable results. The samples have not always been large enough to admit of absolutely conclusive reports, but a statement from the laboratory of a leading mechanical goods factory indicates the high degree of tensile strength for the Pará rubber cured by this process. A report from a druggists' sundries factory says "From indications, it would appear that the coagulating agent used does not injure the rubber in any way, and on the other hand, the color is certainly improved." All reports refer to the excellent appearance and quality of caucho treated by Dr. Pinto's process, as compared with caucho prepared previously under any system.

THE EDITOR'S BOOK TABLE.

A Crise Amazonica e a Borracha. 1909. 2a Edição Revista e Aumentada. [By] J. A. Mendes. Pará. 1909. [Paper. 8vo. Pp. 208 + tables.]

THIS book opens with correspondence between the governor of Pará and the president of the Brazilian republic, and of the Pará commercial association with the latter, relative to the mission of Mr. Mendes, a Pará merchant, to the national capital. He had in view the creation at Rio of a greater interest in Amazonian affairs, and particularly the adoption of measures for the benefit of the rubber production. In support of the measures he urged, Mr. Mendes wrote for the newspapers a series of articles on the rubber interest, which are here compiled, together with the most complete statistics of recent rubber production, prices, and other details regarding the trade in Amazon rubber that have yet been published. The work of Mr. Mendes proved influential, in respect both of the creation of new banking facilities on the Amazon and the adoption of laws for the encouragement of direct exports of rubber by producers.

"The Father of the Bicycle."

THERE is no question that the giving of a practical shape to the bicycle afforded the most definite impetus that the development of the pneumatic tire ever received. There had been pneumatic tires and there had been bicycles years before Albert Augustus Pope began his business career, but neither had been developed into a commercial success, and it may be claimed for this gentleman that to no one else in any country is so much credit due for giving the bicycle a practical shape or for encouraging the development of a tire that would make the use of the bicycle popular. Not only this, but in America he was the original apostle of good roads, rightly holding that before he could build up a great business in bicycles—and he did live to build up the greatest in the world—there must be a system of roads over which bicycles could be run. The missionary work he performed in the interest of roads, at a great cost of personal effort, as well as the expenditure of a fortune, not only promoted bicycling, but is to-day a source of satisfaction to hundreds of thousands of motorists, and a source of profit to such users of American highways as still employ horse-drawn vehicles.

Albert Augustus Pope was born September 20, 1843, in Brookline, near Boston. The outbreak of the civil war found him employed as a clerk in the shoe and leather trade. At the age of 19 he enlisted in the Thirty-fifth Massachusetts Infantry in which he was speedily promoted for efficiency, and at the end of the war he received as a reward for "gallant conduct" the brevet title of Lieutenant-Colonel. Shortly afterward he was engaged in business on his own account in Boston in shoe manufacturers' supplies and kindred goods. At the Philadelphia Centennial Exhibition, in 1876, his attention was first attracted to the bicycle by seeing one of English make—the kind with the great high wheel in front. He at once learned to ride and took on the importation of these machines, but in 1877 he had a bicycle built at the cost of \$313, the first built in America, and the forerunner in the very great business in bicycles done by Colonel Pope.

In 1876 he had organized the Pope Manufacturing Co., to deal in small patented articles. It was soon to devote its interest exclusively to bicycles. In 1878 the company gave an order for bicycles to a sewing machine company at Hartford, Connecticut, and soon became the largest customer of the latter, finally taking over the control of the factory. The Pope Manufacturing Co. acquired the various patents on bicycles which speedily came into existence, with a view not so much to monopolizing the industry as to rendering himself independent of others.

The liberal policy of Colonel Pope is illustrated by his issuing licenses under his patents to all reputable concerns engaged in the same industry. His work in the cause of good roads likewise benefited his competitors as well as himself. Likewise the whole trade was benefited by a bicycle journal which he founded at a heavy cost. Always disposed toward a policy of independence, Colonel Pope insisted upon the control of every item of production of the bicycle, an illustration of which was his purchase of the Hartford Rubber Works, originally devoted to another branch of production, but by the Pope Manufacturing Co. devoted exclusively to rubber tires.

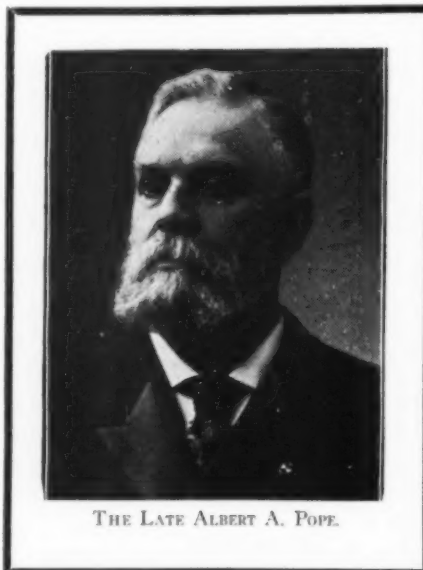
The Pope Manufacturing Co. took part in the organization of the American Bicycle Co., incorporated in New Jersey in 1899, with \$80,000,000 capital authorized, Colonel Pope becoming a director. In the declining popularity of the bicycle which followed within a few years The American Bicycle Co. went into liquidation, after which Colonel Pope organized a new Pope Manufacturing Co. and succeeded to the business of the failed concern. He labored hard to restore the popularity of the bicycle, but finally his company devoted itself more largely to automobiles.

It is to be noted, by the way, that Colonel Pope was a pioneer in automobiles as well as in bicycles. The automobile in America had little serious attention until a motor carriage department was organized by the Pope Manufacturing Co., the first product being an electric vehicle illustrated in THE INDIA RUBBER WORLD, June 10, 1897 (page 249), under the heading "Practical Introduction of the Horseless Carriage."

Much of Colonel Pope's personal fortune was lost in the wreck of the American Bicycle Co. But he addressed himself bravely to turning its effects to account, and although the Pope Manufacturing Co. were obliged to apply for a receivership in August, 1907—at the beginning of the general financial depression—all the creditors were paid in full, and the company was reorganized on a sound basis.

Colonel Pope was in failing health for a considerable time before his death, which occurred on August 10, at his home at Cohasset, Massachusetts. Funeral services were held at the residence and at the Old South Church, in Boston, the latter being attended by members, military and civic organizations and a large number of prominent citizens. The service was of a semi-military nature. The interment was at Forest Hills cemetery.

Colonel Pope married, September 20, 1871, Miss Abby Linder, of Newton, Massachusetts, who survives him, with three sons and a daughter. They are Albert L. Pope, now president of the Pope company; Harold L. Pope, Ralph L. Pope and Mrs. Freeman L. Hinckley.



THE LATE ALBERT A. POPE.

Colonel Pope was a director in several banks and a member of various other institutions—business, social, scientific, and so on. He had served in the city councils of Boston and Newton.

The value of Colonel Pope's estate was not stated at the filing of his will for probate at Dedham, Massachusetts, on August 14, but it is estimated at more than \$2,000,000. There are fourteen bequest of public or philanthropic character, disposing of shares in the Pope Manufacturing Co., of the par value of \$21,000. Provision is made for the widow of an annuity of \$12,000 for life, together with liberal bequests to the descendant's sisters and various other relatives.

The duties of the receivers of the old Pope Manufacturing Co. ceased on August 3, when the last formality was concluded in the New Jersey court and the receivers were discharged from further responsibility. The new, reorganized Pope Manufacturing Co., however, had been in possession of the Pope factories and property for several months.

Two New Yorkers, while engaged in pumping up a deflated automobile tire, are mentioned as each having had an arm fractured as a result of the tire explosion.

FISHER PROCESS RUBBER.

THE Fisher Process Rubber Co., incorporated August 4, 1909, under the laws of New York, with \$100,000 capital, has been formed for acquiring a chemical process for the preservation of rubber latex for any period desired and for its coagulation whenever convenient. The inventor of the process is Mr. William Fisher, a German chemist, who has spent many years in the rubber countries of America and Asia. It is claimed by Mr. Fisher that by the use of his process a given amount of latex will yield more rubber, and rubber of a better average quality, and therefore salable at a higher price, than is possible under any other

treatment. Mr. Fisher also has devoted attention to the development of an improved tapping tool.

MR. A. H. ALDEN, president of the New York-Commercial Co., spent part of the summer in Europe. The rubber business of Mr. Alden at Pará and Manáos has been formed into Aldebert H. Alden, Limited, registered in London with £100,000 capital.

THE Fisk Rubber Co. (Chicopee Falls, Massachusetts), claim to have made the largest tires ever built for an automobile—rear tires 40 x 6 inches. The front tires for the same machine were 40 x 5 inches.

Review of the Crude Rubber Market.

WHILE prices have declined sharply since our last quotations, they are still at a very high level, and the market closed firm at the end of the month. In fact, closing prices were higher at the close than a few days earlier. Receipts have been taken promptly. The decline was attributed to the fact that the tire manufacturers having covered their wants pretty fully, they had retired from the market for the time being; besides the period of non-arrivals at Pará is constantly shortening, with the approach of the crop season.

At the monthly sale at Antwerp on August 27 about 500 tons found buyers at very firm prices, which is more significant in view of this having been a large sale.

Following are the quotations at New York for Pará grades, one year ago, one month ago, and August 30—the current date:

PARÁ.	Sept. 1, '08.	Aug. 1, '09.	Aug. 30.
Islands, fine, new.....	89@ 90	@ 181	@ 168
Islands, fine, old.....	none here	@ 185	@ 175
Upriver, fine, new.....	95@ 96	@ 195	@ 190
Upriver, fine, old.....	98@ 100	@ 198	none here
Islands, coarse, new.....	43@ 44	@ 75	@ 64
Islands, coarse, old.....	none here	@ 78	@ 75
Upriver, coarse, new.....	68@ 69	@ 120	@ 113
Upriver, coarse, old.....	69@ 70	none here	none here
Cametá.....	.....	@ 92	@ 83
Caucho (Peruvian), ball.....	61@ 62	@ 112	@ 105
Caucho (Peruvian), sheet.....	50@ 51	@ 90	@ 86
Ceylon (Plantation), fine sheet.....	103@ 104	@ 200	@ 192
AFRICAN.	Sept. 1, '08.	Aug. 1, '09.	Aug. 30.
Lopori ball, prime.....	80@ 81	@ 125	@ 120
Popori strip, prime.....	62@ 63	@ 120	@ 118
Aruwimi.....	.....	@ 115	@ 106
Upper Congo ball, red.....	.....	@ 123	@ 120
Ikelemba.....	none here	@ ..	@ ..
Sierra Leone, 1st quality.....	78@ 80	@ 125	@ 123
Massai, red.....	78@ 80	@ 125	@ 123
Saudon niggers.....	54@ 55	@ 118	@ 110
Cameroon ball.....	48@ 49	@ 108	@ 105
Benguela.....	43½@ 44	@ 80	@ 80
Madagascar, pinky.....	64@ 65	@ 104	@ 102
Accra flake.....	15@ 16	@ 24	@ 24
CENTRALS.	Sept. 1, '08.	Aug. 1, '09.	Aug. 30.
Esmeralda, sausage.....	60@ 61	@ 98	@ 95
Guayaquil, strip.....	44@ 45	@ 85	@ 78
Nicaragua, scrap.....	59@ 60	@ 97	@ 95
Panama.....	44@ 45	@ 88	@ 83
Mexican, scrap.....	59@ 60	@ 98	@ 95
Mexican, slab.....	40@ 41	@ 85	@ 80
Mangabeira, sheet.....	43@ 44	@ 66	@ 66
Guayule.....	25@ 26	@ 40	@ 45
EAST INDIAN.	Sept. 1, '08.	Aug. 1, '09.	Aug. 30.
Assam.....	72@ 73	95@ 96	95@ 96
Pontianak.....	.....	@ 43½	@ 43½
Borneo.....	26@ 27	@ 40	@ 40

Late Pará cables quote:

	Per Kilo.		Per Kilo.
Islands, fine.....	88½	Upriver, fine.....	
Islands, coarse.....	28½	Upriver, coarse.....	
		Exchange.....	15 5/32d.

Late Pará cables quote:

	Per Kilo.		Per Kilo.
Islands, fine.....	88½	Upriver, fine.....	108½
Islands, coarse.....	38½	Upriver, coarse.....	88½

NEW YORK RUBBER PRICES FOR JULY (NEW RUBBER).

	1909.	1908.	1907.
Upriver, fine.....	1.50@ 1.95	.91@ .96	1.08@ 1.15
Upriver, coarse.....	1.05@ 1.20	.64@ .67	.86@ .90
Islands, fine.....	1.41@ 1.84	.83@ .88	1.04@ 1.08
Islands, coarse.....	.70@ .75	.42@ .46	.61@ .64
Cametá.....	.80@ .92	.52@ .55	.70@ .71

Statistics of Para Rubber (Excluding Caucho).

NEW YORK.

	Fine and Medium.	Coarse.	Total 1909.	Total 1908.	Total 1907.
Stocks, June 30..... <i>tons</i>	203	189	= 392	347	303
Arrivals, July	379	244	= 623	1350	695
Aggregating	582	433	= 1015	1697	998
Deliveries, July	459	326	= 785	1411	708
Stocks, July 31.....	123	107	= 230	286	290

PARÁ.

	1909.	1908.	1907.	ENGLAND.	1909.	1908.	1907.
Stocks, June 30.... <i>tons</i>	245	373	170	320	1235	950	
Arrivals, July	760	1080	1090	550	376	525	
Aggregating	1005	1453	1260	870	1611	1475	
Deliveries, July	455	1203	1095	625	1411	800	
Stocks, July 31.....	550	250	165	245	200	675	

ENGLAND.

	1909.	1908.	1907.
World's visible supply, July 31..... <i>tons</i>	1,300	1,922	1,659
Pará receipts, July 1 to July 31.....	760	1,080	1,090
Pará receipts of Caucho, same dates.....	330	240	230
Afloat from Pará to United States, July 31	none	270	109
Afloat from Pará to Europe, July 31....	275	355	420

Liverpool.

WILLIAM WRIGHT & Co. report [August 3]:

Fine Pará.—Record prices, record sales, and a record gamble fitly describe this month's market. The unprecedented advance of 2s. per pound has, we think, been almost entirely due to speculation, practically amounting to a reckless speculation of the Wall street type, but we would remind such speculators that there is a process known as "going to the wall," as well as one emanating from it, and that the former is, generally speaking, the ultimate goal of such ventures. No nation, least of all America, has a commercial reputation for philanthropy, and we refuse to believe that manufacturers there are buying rubber which they cannot use until November or December, at 12. 9d. to 2s. per pound more than they might reasonably expect to get it by waiting. Such rash speculation is bound to

Rubber Scrap Prices.

LATE New York quotations—prices paid by consumers for car-load lots, per pound—show an advance since last month:

Old rubber boots and shoes—domestic.....	107½@ 11
Old rubber boots and shoes—foreign.....	103½@ 107½
Pneumatic bicycle tires.....	6¾@
Automobile tires.....	6¾@ 7
Solid rubber wagon and carriage tires.....	9 @ 9½
White trimmed rubber.....	10 @ 11
Heavy black rubber.....	6½@ 6¾
Air brake hose.....	4½@ 4¾
Garden hose.....	3 @ 3½
Fire and large hose.....	3¼@ 3½
Matting.....	2 @ 2¼

seriously affect the rubber industry; a continuance of present prices will inevitably lead to the closing down of some factories and a serious curtailment in others. In the best interests of the trade it is high time "a halt" was called, and we can only counsel manufacturers under present conditions to use as little rubber as possible. For the first week of the month there was a firm and steady market; subsequently, for reasons given above, an excited market prevailed, with a series of rapid advances in prices, culminating in 82.6d. [= \$2.06.8] being paid for near and 62.10d. [= \$1.66.] for January-February.

United States Imports of Crude Rubber.

OFFICIAL FIGURES (FISCAL YEAR ENDING JUNE 30).			
FROM	1906-07.	1907-08.	1908-09.
United Kingdom.....pounds	9,893,471	6,809,622	12,825,192
Germany.....	4,730,257	2,821,194	4,503,286
Other Europe.....	9,381,326	6,883,473	7,598,809
Central America and British Honduras.....	1,194,249	992,198	861,636
Mexico.....	7,175,097	9,269,443	15,460,365
Brazil.....	40,286,751	32,645,173	43,903,670
Other South America.....	2,036,962	1,537,887	1,904,114
East Indies.....	2,234,654	1,237,487	1,127,686
Other Countries.....	31,071	30,683	25,137
Total.....pounds	76,963,838	62,233,160	88,359,895
Import value.....	\$58,919,981	\$36,613,185	\$61,709,723
Av. per pound.....	76.5 cents.	58.8 cents.	69.8 cents.

[NOTE.—The extreme advance in crude rubber developed too late in the fiscal year to bring up the average invoice values to a figure as high as prevailed two years before. Another factor in keeping down the import cost is the great increase in the importation of guayule rubber. The average invoice value of all rubber imported during June, 1909, was 81.7 cents, against 56.2 cents in June, 1907.]

OTHER UNITED STATES IMPORTS.

	1906-07.	1907-08.	1908-09.
Balata.....pounds	565,396	584,552	1,157,018
Gutta-percha.....	546,890	188,610	252,559
Waste rubber.....	29,335,193	16,331,035	20,468,526
Gutta-jelutong.....	28,437,660	22,803,303	24,826,296

Antwerp.

ANOTHER important advance in the price of caoutchouc occurred at the sale in Antwerp on July 29. This was inevitable after the fantastic rise of nearly 28 per cent. in the Pará less than a month before. The greater part of the lots offered at Antwerp were sold at an average increase of 1.16 francs—i. e., 11.45 per cent. The prices paid are better than ever before realized. Plantation caoutchouc is the most sought after, bringing as much as 23.65 francs a kilogram (\$2.07 per pound), that is, as much

as the Pará, which it equals in quality, if it does not surpass it. The good Congo varieties also bring very satisfactory prices: 14.32 francs for the Upper Congo, and for the black Kasai, and 5.77 francs for the red Kasai.

It is to be noted that during the sale at Havre on July 27, the varieties from the French Congo scored the highest prices ever reached, especially the M'Poko rubber at 11.10 francs, the Sangha at 13.65 francs, the N'Kémé at 12.50 francs, the Upper-Oubangui at 13.27 francs, the N'Goko Sangha at 13.17½ francs, and the Ekela at 13.25 francs.

RUBBER STATISTICS FOR JULY.

DETAILS.	1909.	1908.	1907.	1906.	1905.
Stocks, May 31.....kilos	476,420	684,866	671,793	618,834	582,986
Arrivals in July.....	529,920	227,202	613,064	328,799	449,085
Congo sorts.....	461,506	172,828	559,144	247,197	324,963
Other sorts.....	68,414	54,374	53,920	81,602	124,122
Aggregating.....	1,006,340	912,068	1,284,857	947,633	1,032,071
Sales in July.....	481,828	216,517	353,501	416,192	212,512
Stocks, July 31.....	524,512	695,551	931,356	531,441	819,559
Arrivals since Jan 1.....	2,933,424	2,833,027	3,181,798	3,355,605	3,210,284
Congo sorts.....	2,177,715	2,430,364	2,753,722	2,560,838	2,536,030
Other sorts.....	755,709	402,663	428,076	794,767	674,254
Sales since Jan 1.....	3,004,647	3,144,370	2,918,626	3,559,351	2,932,086

IMPORTS FROM PARA AT NEW YORK.

[The Figures Indicate Weights in Pounds.]

JULY 28.—By the steamer *Justin*, from Pará:

IMPORTERS.	Fine.	Medium.	Coarse.	Cauch.	Total.
Poel & Arnold.....	59,000	9,200	86,200	5,400	150,800
A. T. Morse & Co.....	42,100	....	43,000	....	85,100
Hagemeyer & Brunn.....	31,100	1,100	40,900	....	73,100
New York Commercial Co.....	3,200	23,000	6,300	2,100	34,600
General Rubber Co.....	1,400	600	14,500	300	16,800
Edmund Recks & Co.....	4,700	700	1,300	....	6,700
Total.....	141,500	34,600	192,800	7,800	376,700

AUGUST 13.—By the steamer *Cearaense*, from Manáos and Pará:

IMPORTERS.	Fine.	Medium.	Coarse.	Cauch.	Total.
Poel & Arnold.....	155,700	15,400	82,000	10,900	264,000
A. T. Morse & Co.....	92,400	6,300	85,300	....	184,000
Hagemeyer & Brunn.....	52,500	700	83,200	....	136,400
New York Commercial Co.....	74,200	31,900	17,000	4,000	127,100
General Rubber Co.....	7,200	300	9,900	....	17,400
Edmund Recks & Co.....	10,000	1,800	2,000	....	13,800
C. P. dos Santos.....	6,100	300	1,300	....	7,700
Total.....	398,100	56,700	286,700	14,900	750,400

PARA RUBBER VIA EUROPE.

	POUNDS.
JULY 28.—By the <i>Caronia</i> =Liverpool:	
Poel & Arnold (Fine).....	56,000
New York Commercial Co. (Fine).....	27,000
Poel & Arnold (Coarse).....	60,000
Aug. 2.—By the <i>Victoria</i> =Hamburg:	
A. T. Morse & Co. (Fine).....	22,500
Aug. 2.—By the <i>Cedric</i> =Liverpool:	
New York Commercial Co. (Fine).....	30,000
A. T. Morse & Co. (Coarse).....	11,000
Aug. 5.—By the <i>Tenonic</i> =London:	
Poel & Arnold (Coarse).....	40,000
Aug. 7.—By the <i>Campania</i> =Liverpool:	
Poel & Arnold (Coarse).....	22,500
Aug. 9.—By the <i>Lapland</i> =Antwerp:	
George A. Alden & Co. (Fine).....	5,500
Aug. 19.—By the <i>Atrato</i> =Mollendo:	
New York Commercial Co. (Fine).....	4,500

OTHER NEW YORK ARRIVALS.

CENTRALS.

[*This sign, in connection with imports of Centrals, denotes Guayule rubber.]

	POUNDS.
JULY 26.—By the <i>El Dia</i> =Galveston:	
Continental-Mexican Rubber Co.....	*125,000
Ed. Boehringer.....	*45,000
JULY 26.—By the <i>Larvingo</i> =Pernambuco:	
A. D. Hitch & Co.....	9,000
Elmhurst & Co.....	3,500
JULY 27.—By the <i>Mansanillo</i> =Tampico:	
Ed. Maurer.....	*80,000
Poel & Arnold.....	*20,000

JULY 29.—By the *Colon*=Colon:

G. Amsinck & Co.....	3,500
A. Santos & Co.....	3,000
Elias & Abdo.....	2,000
Dumarest Bros.....	2,000
Hy. Mann & Co.....	2,000
Pablo, Calver & Co.....	1,000
Graham, Hinkley Co.....	1,000
Total.....	14,500

JULY 30.—By the *Antilla*=Tampico:

Ed. Maurer.....	*65,000
New York Commercial Co.....	*33,000
For Europe.....	*45,000
Total.....	*143,000

JULY 31.—By the *Monterey*=Frontera:

Harburger & Stack.....	7,000
H. Marquardt & Co.....	5,500
A. Klepstein & Co.....	1,000
Total.....	13,500

AUG. 2.—By the *Victoria*=Hamburg:

Geo. A. Alden & Co.....	22,500
-------------------------	--------

AUG. 4.—By the *Thames*=Colon:

Maitland, Coppell Co.....	5,500
Mecke & Co.....	3,000
Brandon & Bros.....	2,500
Manhattan Rubber Co.....	1,500
Eggers & Heinlein.....	1,000
A. N. Rotholz.....	1,000
Total.....	14,500

AUG. 5.—By the *Vasari*=Bahia:

A. Hirsch & Co.....	25,000
New York Commercial Co.....	22,500
Poel & Arnold.....	22,500
J. H. Rossbach Bros.....	18,000
A. D. Hitch & Co.....	1,000
Total.....	90,000

AUG. 6.—By the *Alleghany*=Savanilla:

Stanley, Jordan & Co.....	2,500
A. Held.....	2,000
Seanz & Co.....	1,500
Total.....	6,000

AUG. 5.—By the *Panama*=Colon:

Brandon & Bros.....	4,500
G. Amsinck & Co.....	4,000
Hirzel, Feltman Co.....	2,500

Hy. Mann & Co.....	2,000
A. M. Capens' Sons.....	1,500
American Trading Co.....	1,500
Mecke & Co.....	1,000
Roldau & Van Sickle.....	1,000
A. Rosenthal & Sons.....	1,000
Harburger & Stack.....	1,000
De Lima & Cortesga.....	1,000
Total.....	21,000

AUG. 6.—By the *Antilla*=New Orleans:

A. T. Morse & Co.....	6,000
Eggers & Heinlein.....	2,500
Manhattan Rubber Co.....	1,000
G. Amsinck & Co.....	1,000
Total.....	10,500

AUG. 6.—By the *Merida*=Mexico:

H. Marquardt & Co.....	3,000
Graham, Hinkley Co.....	2,500
E. N. Lebhals & Co.....	2,000
Harburger & Stack.....	1,000
American Trading Co.....	1,000
Total.....	9,500

AUG. 9.—By the *St. Paul*=London:

Poel & Arnold.....	15,000
--------------------	--------

AUG. 10.—By the *Yamuri*=Tampico:

Ed. Maurer.....	*70,000
Continental-Mexican Rubber Co.....	*15,000
Poel & Arnold.....	*15,000
Total.....	*100,000

AUG. 11.—By the *El Alba*=Galveston:

Continental & Mexican Co.....	*125,000
-------------------------------	----------

AUG. 12.—By the *Tintoretto*=Bahia:

J. H. Rossbach Bros.....	16,000
A. Hirsch & Co.....	15,000
Poel & Arnold.....	11,000
Total.....	42,000

AUG. 12.—By the *Adance*=Colon:

L. Johnson & Co.....	4,000
G. Amsinck & Co.....	4,000
Hirzel, Feltman & Co.....	3,000
Hy. Mann & Co.....	2,000
A. Rosenthal Sons.....	3,000
Mecke & Co.....	1,000
Dumarest Bros.....	1,000
Total.....	18,000

RUBBER FLUX

No. 17. Particularly adapted to softening material for tubing machine. Almost universally used for waterproofing wire.

No. 48. For fluxing pigments in compounding. A valuable adjunct to the manufacture of moulded goods as it DOES NOT BLOW UNDER CURE.

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WALPOLE RUBBER WORKS
WALPOLE VARNISH WORKS
ELECTRIC INSULATION LABORATORY



THEODORE HOFELLER & CO.
BUFFALO, N. Y.

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OLD RUBBER
IN THE WORLD

CRUDE (MANUFACTURED) RUBBER

In prehistoric ages, scientists say the temperature of the country where "our mineral rubber, Maltha Hydro-Carbon," is mined was the same as it is in Brazil to-day, the country producing the best rubber. Without chemical warrant, however, we make the statement that this is the reason a chemical analysis of Maltha Hydro-Carbon is nearly identical with that of Para. It is the fossilized rubber tree of centuries ago.

Write to-day—now—for a free working sample for it is truly a VIRGIN SYNTHETIC RUBBER.

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CHARLES T. WILSON

MEXICAN (Guayule) RUBBER

I invite inquiries from manufacturers on this rubber. Being the direct representative of large producers, I am in position to quote on various qualities for immediate and future delivery.

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GUAYULE

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Sole Representative of the MADERO interests in Mexico,
Largest Producers of Guayule Rubber, Operating Nine Factories.

Aug. 13.—By the <i>El Siglo</i>=Galveston: Continental-Mexican Rubber Co. *135,000 Aug. 13.—By the <i>Morro Castle</i>=Mexico: Harburger & Stack 6,000 E. N. Tibbals Co. 3,000 Graham, Hinkley Co. 1,500 E. Steiger & Co. 1,000 J. W. Wilson & Co. 1,000 12,500 Aug. 16.—By the <i>Arabic</i>=Liverpool: Rubber Import Co. 7,000 Aug. 16.—By the <i>Cincinnati</i>=Hamburg: J. H. Rosbach Bros. 15,000 Aug. 17.—By the <i>Cienfuegos</i>=Tampico: New York Commercial Co. *80,000 Ed. Maurer *70,000 Poel & Arnold *30,000 *180,000 Aug. 17.—By the <i>Excelsior</i>=New Orleans: A. T. Morse & Co. 3,000 Manhattan Rubber Mfg. 1,000 4,000 Aug. 19.—By the <i>Atrato</i>=Colombia: A. M. Capens' Sons 3,000 J. A. Pauli & Co. 1,000 Kunhardt & Co. 1,000 5,000 Aug. 18.—By the <i>Siberia</i>=Colon: G. Amsinck & Co. 8,000 A. Rosenthal's Sons 7,000 Piza, Nephews Co. 5,500 A. Santos & Co. 3,000 Brandon & Bros. 2,000 J. S. Lambrade Co. 2,000 Pablo, Calvet Co. 2,000 Andean Trading Co. 2,000 Maitland, Coppel Co. 1,500 Hy. Mann & Co. 1,000 Fidanque Bros. Co. 1,000 35,000 Aug. 19.—By <i>El Paso</i>=Galveston: Continental-Mexican Rubber Co. *65,000 Aug. 20.—By the <i>Mexico</i>=Frontera: Harburger & Stack 9,000 E. N. Tibbals & Co. 3,000 Graham, Hinkley Co. 1,500 Tropical Products Co. 1,500 General Export Co. 1,000 A. Klepstein & Co. 1,000 17,000																																			
AFRICAN. JULY 23.—By the <i>Louisiana</i>=Havre: Poel & Arnold 35,000 JULY 26.—By the <i>Cleveland</i>=Hamburg: A. T. Morse & Co. 46,000 George A. Alden & Co. 17,000 Poel & Arnold 11,500 74,500 JULY 26.—By the <i>Celtic</i>=Liverpool: Livesey & Co. 9,000 H. A. Gould Co. 7,000 Robinson & Co. 2,000 W. L. Gough & Co. 2,000 20,000 JULY 27.—By the <i>Zeeland</i>=Antwerp: A. T. Morse & Co. 82,000 W. H. Stiles & Co. 5,000 87,000 JULY 28.—By the <i>Caronia</i>=Liverpool: Poel & Arnold 120,000 George A. Alden & Co. 22,500 H. A. Gould Co. 4,500 147,000 JULY 29.—By the <i>Louisa</i>=Lisbon: General Rubber Co. 145,000 JULY 29.—By the <i>President Grant</i>=Hamburg: Poel & Arnold 22,500 A. T. Morse & Co. 28,000 General Rubber Co. 5,500 56,000 Aug. 2.—By the <i>Cedric</i>=Liverpool: Geo. A. Alden & Co. 30,000 Robinson & Co. 15,000 W. L. Gough & Co. 9,000 54,000 Aug. 2.—By the <i>Augusta</i>=Hamburg: Poel & Arnold 6,500 Aug. 3.—By the <i>Kroonland</i>=Antwerp: A. T. Morse & Co. 37,000 Poel & Arnold 33,000 70,000 Aug. 4.—By the <i>Erika</i>=Lisbon: General Rubber Co. 56,000 Aug. 6.—By the <i>Pennsylvania</i>=Hamburg: A. T. Morse & Co. 75,000 Muller, Schall & Co. 22,500 George A. Alden & Co. 15,000 Rubber Trading Co. 15,000 Poel & Arnold 9,000 W. L. Gough & Co. 2,500 139,000 Aug. 7.—By the <i>Campania</i>=Liverpool: Poel & Arnold 28,000 George A. Alden & Co. 10,000 Livesey & Co. 2,500 40,500 Aug. 9.—By the <i>Touraine</i>=Havre: George A. Alden & Co. 22,500																																			
Aug. 9.—By the <i>Baltic</i>=Liverpool: Raw Products Co. 4,500 W. L. Gough & Co. 4,000 Rubber Import Co. 2,000 10,500 Aug. 9.—By the <i>Laplant</i>=Antwerp: Rubber Trading Co. 8,000 A. T. Morse & Co. 7,000 Raw Products Co. 4,500 W. H. Stiles & Co. 4,500 24,000 Aug. 11.—By the <i>Carmania</i>=Liverpool: Poel & Arnold 20,000 Geo. A. Alden & Co. 3,000 Robinson & Co. 2,000 25,000 Aug. 11.—By the <i>Adriatic</i>=London: George A. Alden & Co. 11,500 Aug. 11.—By the <i>Lincoln</i>=Hamburg: Poel & Arnold 42,000 A. T. Morse & Co. 22,000 General Rubber Co. 10,000 Geo. A. Alden & Co. 5,000 79,000 Aug. 14.—By the <i>California</i>=Bordeaux: General Rubber Co. 22,500 Aug. 16.—By the <i>Arabic</i>=Liverpool: A. T. Morse & Co. 20,000 Rubber Import Co. 15,000 W. L. Gough & Co. 2,000 37,000 Aug. 16.—By the <i>Vaderland</i>=Antwerp: George A. Alden & Co. 145,000 A. T. Morse & Co. 60,000 Joseph Cantor 13,500 218,500 Aug. 18.—By the <i>Bluecher</i>=Hamburg: A. T. Morse & Co. 30,000 Poel & Arnold 3,000 Geo. A. Alden & Co. 3,500 Rubber Trading Co. 5,500 42,000 Aug. 20.—By the <i>Mexico</i>=Havre: Poel & Arnold 13,500 A. T. Morse & Co. 5,500 C. P. Santos 2,000 21,000 Aug. 21.—By the <i>Lorraine</i>=Havre: George A. Alden & Co. 25,000																																			
EAST INDIAN. [Denotes plantation rubber.] JULY 23.—By the <i>Lowther</i>=Singapore: O. Isenstein & Co. 80,000 George A. Alden & Co. 5,000 85,000 JULY 24.—By the <i>Hohenfels</i>=Colombo: A. T. Morse & Co. *11,000 N. Y. Commercial Co. *8,000 *19,000 JULY 26.—By the <i>Minnetonka</i>=London: General Rubber Co. *22,500 A. T. Morse & Co. *15,500 *38,000 JULY 28.—By the <i>Caronia</i>=Liverpool: Poel & Arnold 7,000 JULY 28.—By the <i>Minnetonka</i>=London: Robinson & Co. 15,000 JULY 28.—By the <i>Oceanic</i>=London: Poel & Arnold *38,000 New York Commercial Co. *22,500 A. T. Morse & Co. *11,000 *71,500 JULY 29.—By the <i>Indramayo</i>=Singapore: O. Isenstein & Co. 75,000 Poel & Arnold 13,500 W. L. Gough & Co. 15,000 103,500 Aug. 2.—By the <i>Philadelphia</i>=London: Poel & Arnold *22,500 A. T. Morse & Co. *11,500 *34,000 Aug. 2.—By the <i>Bucaras</i>=Colombo: A. T. Morse & Co. *11,500 Aug. 5.—By the <i>Teutonic</i>=London: Poel & Arnold *11,500 Aug. 5.—By the <i>Crostafels</i>=Colombo: New York Commercial Co. *11,500 Aug. 9.—By the <i>St. Paul</i>=London: Poel & Arnold *22,500 A. T. Morse & Co. *13,500 General Rubber Co. *7,000 *43,000 Aug. 9.—By the <i>Satsuma</i>=Singapore: O. Isenstein & Co. 20,000 Poel & Arnold 20,000 Geo. A. Alden & Co. 11,500 Heabler & Co. 5,500 57,000 Aug. 10.—By the <i>St. Paul</i>=London: Poel & Arnold 27,000 Robinson & Co. 5,000 32,000 Aug. 12.—By the <i>Adriatic</i>=London: Poel & Arnold *22,500																																			
Aug. 16.—By the <i>Arabic</i>=Liverpool: Rubber Import Co. 9,000 Aug. 16.—By the <i>Woglinde</i>=Singapore: Heabler & Co. 9,000 Aug. 19.—By the <i>Majestic</i>=London: New York Commercial Co. *6,000 Poel & Arnold *5,000 *11,000 Aug. 21.—By the <i>Queen Mary</i>=Colombo: New York Commercial Co. *3,500																																			
GUTTA-JELUTONG. JULY 23.—By the <i>Lowther</i>=Singapore: George A. Alden & Co. 500,000 Heabler & Co. 770,000 Poel & Arnold 225,000 W. L. Gough Co. 155,000 M. Weschner & Co. 85,000 1,735,000 JULY 29.—By the <i>Indramayo</i>=Singapore: Heabler & Co. 150,000 George A. Alden & Co. 350,000 W. L. Gough Co. 170,000 Poel & Arnold 110,000 L. C. Hopkins Co. 100,000 Winter & Smille 55,000 875,000 Aug. 9.—By the <i>Satsuma</i>=Singapore: Heabler & Co. 400,000 George A. Alden & Co. 150,000 Poel & Arnold 150,000 W. L. Gough Co. 110,000 810,000 Aug. 10.—By the <i>Shimosa</i>=Singapore: Heabler & Co. 225,000 W. L. Gough Co. 200,000 Poel & Arnold 225,000 L. C. Hopkins Co. 50,000 700,000 Aug. 16.—By the <i>Woglinde</i>=Singapore: Heabler & Co. 125,000 Poel & Arnold 55,000 L. C. Hopkins Co. 70,000 250,000																																			
GUTTA-PERCHA. Pounds. JULY 29.—By the <i>President Grant</i>=Hamburg: E. Oppenheim 75,000 JULY 29.—By the <i>Indramayo</i>=Singapore: Otto Isenstein & Co. 34,000 Aug. 3.—By the <i>Minnewaska</i>=London: Heabler & Co. 13,500 Aug. 9.—By the <i>Baltic</i>=Liverpool: Earle Bros. 11,500 Aug. 9.—By the <i>Satsuma</i>=Singapore: Heabler & Co. 5,500 Aug. 16.—By the <i>Minneapolis</i>=London: Heabler & Co. 22,500 Aug. 18.—By the <i>Bluecher</i>=Hamburg: E. Oppenheim 2,500																																			
BALATA. JULY 27.—By the <i>Coppename</i>=Demerara: Ed. Maurer 2,500 Middleton & Co. 2,000 4,500 JULY 30.—By the <i>Grenada</i>=Trinidad: Frame & Co. 2,500 AUGUST 3.—By the <i>Surawacca</i>=Surinam: Frame & Co. 3,500 Ed. Maurer 2,500 G. Amsinck & Co. 1,000 7,000 Aug. 10.—By the <i>Suriname</i>=Demerara: Ed. Maurer 2,500 Aug. 17.—By the <i>Guiana</i>=Demerara: George A. Alden & Co. 8,000 Aug. 17.—By the <i>Maroswey</i>=Trinidad: Ed. Maurer 2,000 Middleton & Co. 1,000 3,000 Aug. 18.—By the <i>Bluecher</i>=Hamburg: W. L. Gough & Co. 3,500																																			
CUSTOM HOUSE STATISTICS. PORT OF NEW YORK—JULY. <table> <tr> <th>Imports:</th><th>Pounds.</th><th>Value.</th></tr> <tr> <td>India-rubber</td><td>4,646,040</td><td>\$3,633,037</td></tr> <tr> <td>Balata</td><td>17,470</td><td>7,661</td></tr> <tr> <td>Gutta-percha</td><td>49,210</td><td>22,871</td></tr> <tr> <td>Gutta-jelutong (Pontianak)</td><td>517,087</td><td>121,261</td></tr> <tr> <td>Total</td><td>5,230,707</td><td>\$3,784,830</td></tr> <tr> <th>Exports:</th><th></th><th></th></tr> <tr> <td>India-rubber</td><td>200,305</td><td>\$187,007</td></tr> <tr> <td>Balata</td><td>8,577</td><td>3,610</td></tr> <tr> <td>Reclaimed rubber</td><td>32,500</td><td>5,200</td></tr> <tr> <td>Rubber scrap, imported</td><td>2,387,088</td><td>\$196,870</td></tr> </table>			Imports:	Pounds.	Value.	India-rubber	4,646,040	\$3,633,037	Balata	17,470	7,661	Gutta-percha	49,210	22,871	Gutta-jelutong (Pontianak)	517,087	121,261	Total	5,230,707	\$3,784,830	Exports:			India-rubber	200,305	\$187,007	Balata	8,577	3,610	Reclaimed rubber	32,500	5,200	Rubber scrap, imported	2,387,088	\$196,870
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"UNITED STATES RUBBER" AT THE SHOE FAIR.

THE United States Rubber Co. was probably the only exhibitor at the recent First World's Shoe and Leather Fair, at Boston, whose popularity became so great as to necessitate police protection from an overwhelming throng of admirers. This actually occurred, however, on the last night of the fair. The United States company had been particularly generous during the month in the distribution of various attractive items of advertising, as for instance, a genuine leather-bound memorandum book, a hard rubber match safe, miniature rubber boots, and other equally attractive objects, and on the last night of the fair the

crowd surrounding the rubber corner for the purpose of getting these valuable souvenirs became so great as to threaten to overwhelm the entire exhibit, and it required the services of several policemen with considerable lay help to keep the enthusiasm of the crowd within controllable bounds.

This rubber exhibit was one of the most successful at the fair and one of the most interesting. In the first place, the company had taken generous space and had an exhibit that fronted on three aisles, and it went to further expense in having made for the occasion a dozen large, handsome, all-glass show cases. The company showed a sample line of all its different brands, and in addition displayed some unusual styles of rubbers that attracted a great deal of attention, as for instance, the colored silk-top rubbers made at the "American" and "Boston" mills; a line of steel wool rubbers (together with a large lump of steel wool) made at the "Banigan" factory; the "Squadron" boot, a close-fitting riding boot made of rubber but looking precisely like the expensive patent leather riding boots affected by smart army officers on the other side. This particular boot, by the way, is made expressly for the export trade. The "Candee" mill also had a unique exhibit in the way of a pure white storm king boot and a tan sporting boot, while the "glove" mill contributed some sandals and six buckle gaiters of pure white rubber, and also some six-buckle gaiters in tan, and some tan storm shoes with engraved lacing across the uppers.

In addition to a great variety of samples of rubber footwear, this exhibit showed a case in which the paraphernalia for gathering crude rubber in South America was displayed. There was a quantity of the palm nuts that are burned to create the smoke that coagulates the sap, a number of paddles that are used to dip into the sap to hold over the smoke, the gourds in which the natives gather the sap, and the peculiar earthenware funnel shaped chimneys that are put over the fire to concentrate the smoke on the rubber. In addition, there were samples of crude rubbers made by the South American natives, elaborately if not artistically engraved by hand.

In addition to the display of footwear, the United States Rubber Co had quite a display of the goods made by its mechanical factories, as for instance, matting and hose made by the Mechanical Rubber Co. of Chicago, horse pads and rubber heels made by Morgan & Wright, packing and tiling made by the Peerless Rubber Manufacturing Co., and samples of the famous "G & J" automobile tires.

As already mentioned, the company was more than generous in its distribution of attractive advertising souvenirs, giving out during the month 15,000 hard rubber pocket match safes and about 10,000 leather covered memorandum books, which naturally were in great demand. In addition, it had on exhibit a "Jumbo" boot and a "Jumbo" arctic, in which glass vases full of water were very neatly concealed, these vases being full of pinks and other flowers which were distributed at the close of the evening to the lady visitors. Between the company's excellent exhibit and its exceptional kindness to visitors, it was quite natural that the Rubber corner should have proved one of the most popular spots at the fair.

SEND for a free copy of the Index to the new edition of Mr. Pearson's "Crude Rubber and Compounding Ingredients," just out, at THE INDIA RUBBER WORLD office.

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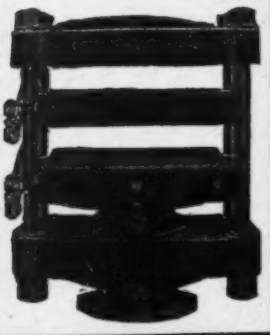
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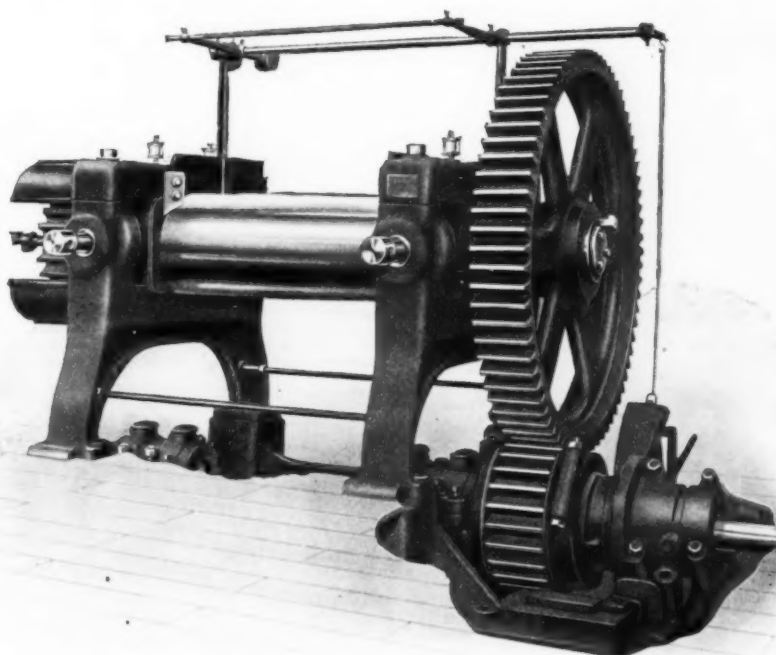
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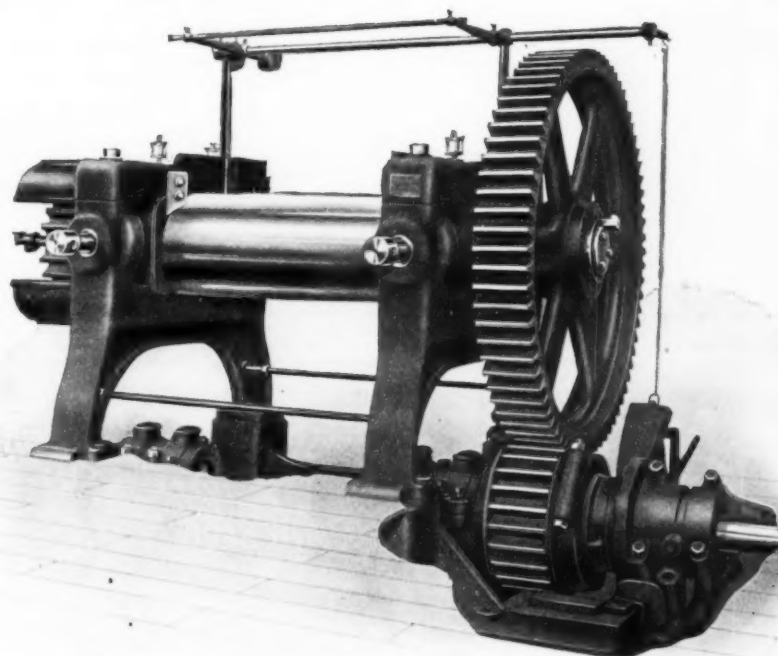
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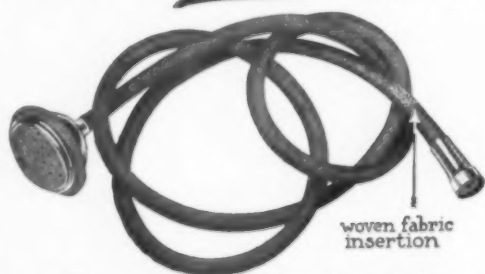
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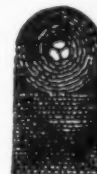
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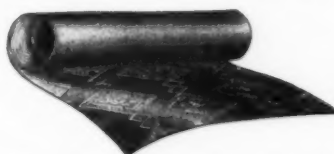
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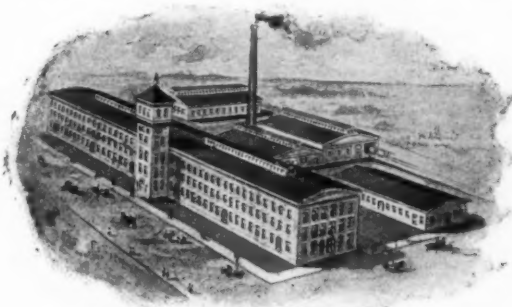


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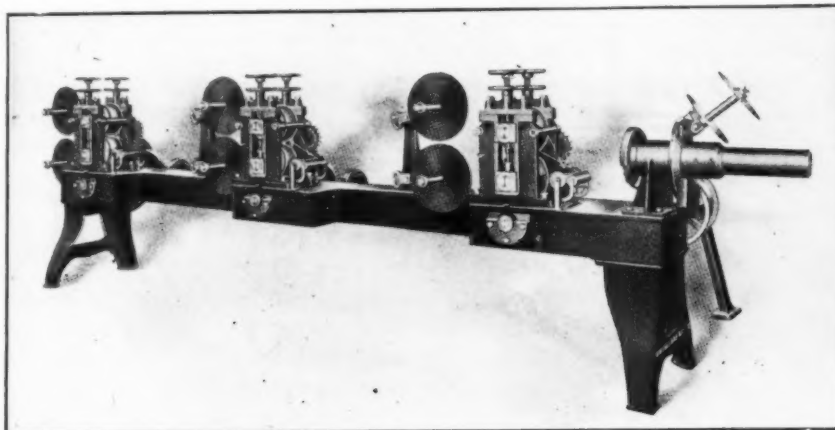
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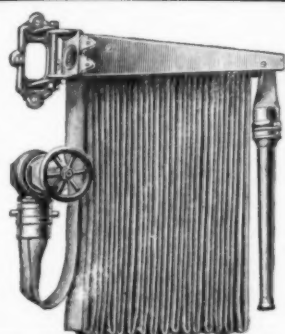
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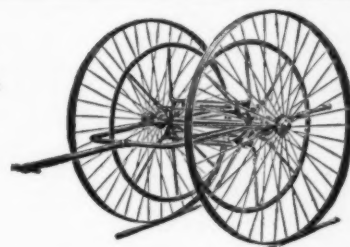
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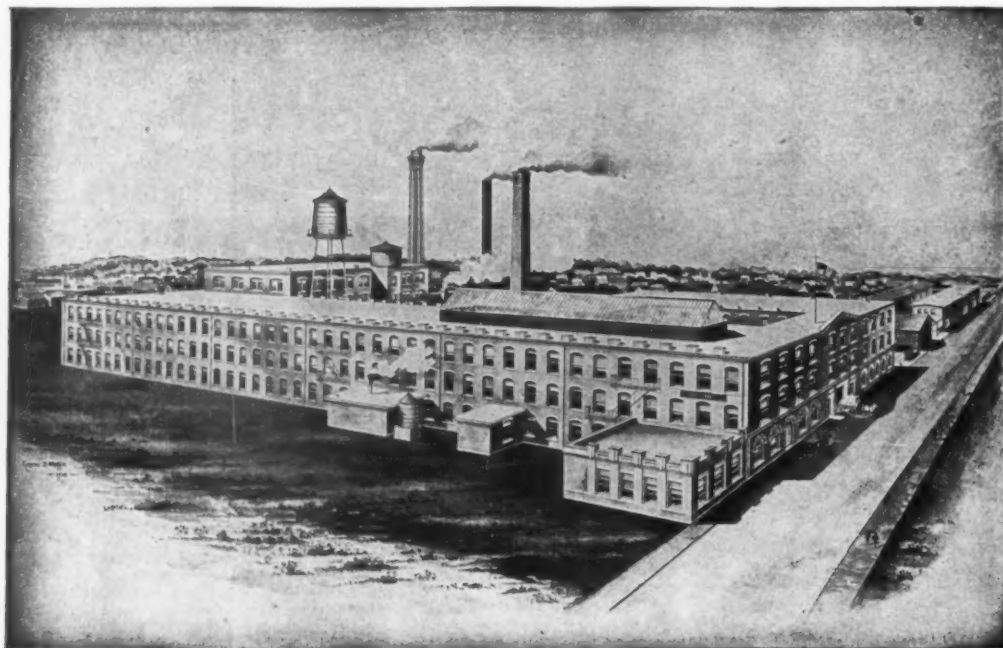
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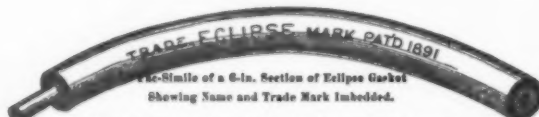
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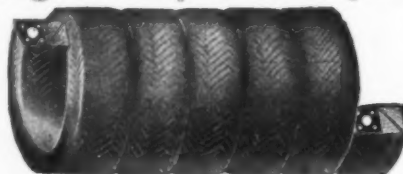
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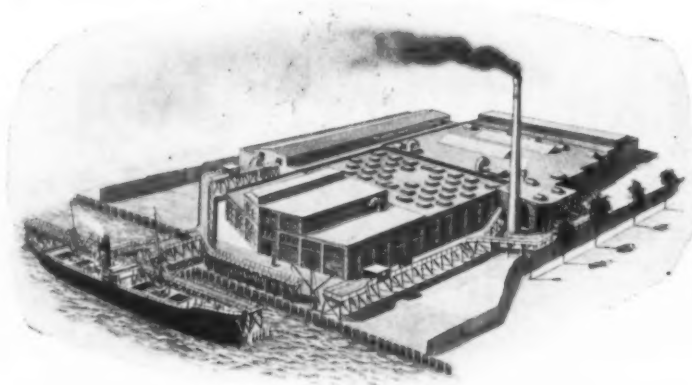
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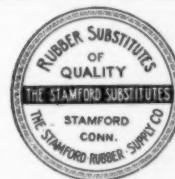
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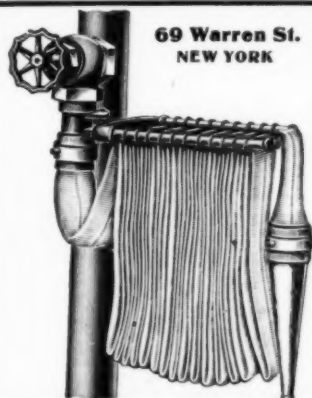
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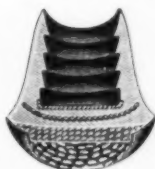
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WANTED.—A man thoroughly familiar with the Delaski loom and the weaving of cotton hose and the lining of same, from garden hose to Underwriters. A good opportunity for the right man. Mill located in one of the central states. In answering state age and experience. Address BOX NO. 51, care of THE INDIA RUBBER WORLD. (377)

SUPERINTENDENT wanted by a rubber factory. A man who understands compounding, both calendar and spreader work, for rubber surface mackintosh and single texture materials suitable for coats and other garments. An exceptional opening, good salary and permanent position for a first-class man with experience and good reputation. All communications confidential. Address BOX NO. 53, care of THE INDIA RUBBER WORLD. (382)

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SALESMAN.—We want the best salesman for mechanical rubber goods that money will buy. Territory, New York and vicinity. Communications confidential. Address QUICK, care of THE INDIA RUBBER WORLD. (379)

WANTED.—For New York and northern Atlantic seaboard, experienced, capable salesman of hard rubber goods. Address THOROUGH, care of THE INDIA RUBBER WORLD. (380)

WANTED FOR BRITISH FACTORY.—Mill room superintendent, molded goods superintendent, and solid tire superintendent. Must be specialists. Permanent posts for right men. Interviews in the United States will be arranged. Address in confidence, stating age, and full particulars of previous experience to BOX NO. 40, care of THE INDIA RUBBER WORLD. (350)

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FIRST CLASS EXPERIENCED MAN WANTED to take charge of the manufacture of automobile tire casings in factory making 1,000 casings per day. Only first class man with long experience and good reputation need apply. Address G. 33, care of THE INDIA RUBBER WORLD. (345)

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STOCK CALENDER MAN WANTED.—State experience, where previously employed, and wages desired. Address CALENDER, care of THE INDIA RUBBER WORLD. (385)

MILL ROOM FOREMAN wanted for a mechanical rubber factory. Write fully as to former positions and wages expected. Address MILL ROOM, care of THE INDIA RUBBER WORLD. (386)

WANTED.—A man who thoroughly understands every detail of the manufacture of catheters and stomach tubes. State salary expected and previous experience, as a good position is open to a competent man. Address BOX NO. 54, care of THE INDIA RUBBER WORLD. (387)

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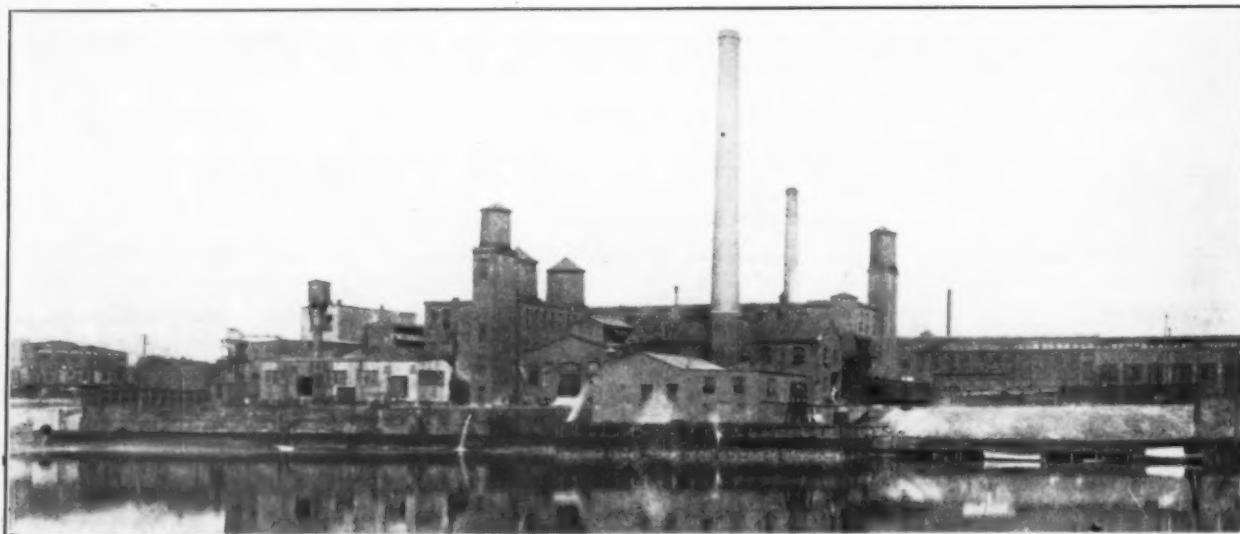
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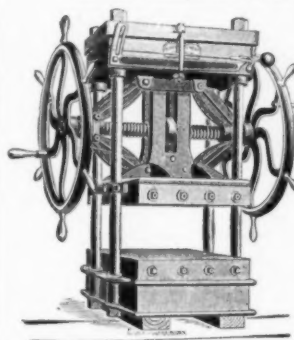
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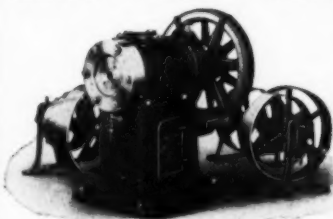
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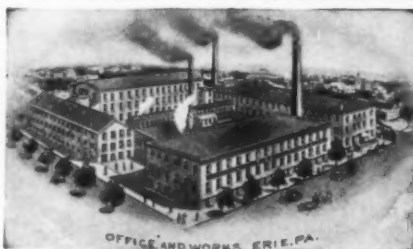
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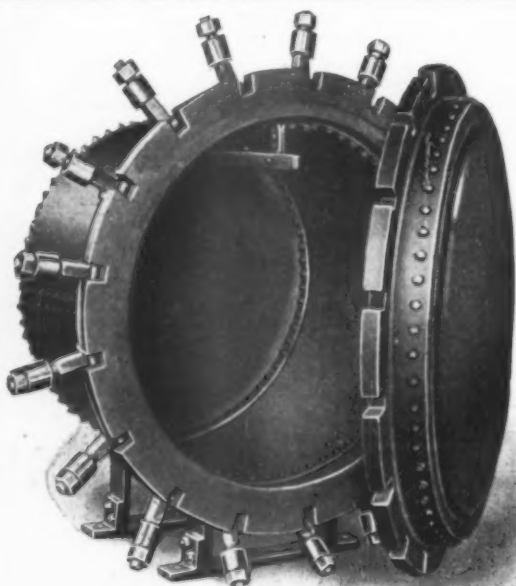
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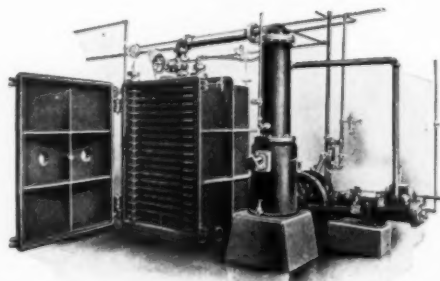
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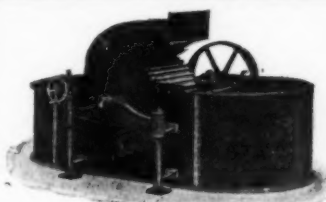


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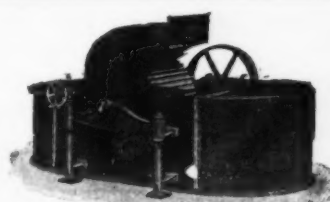
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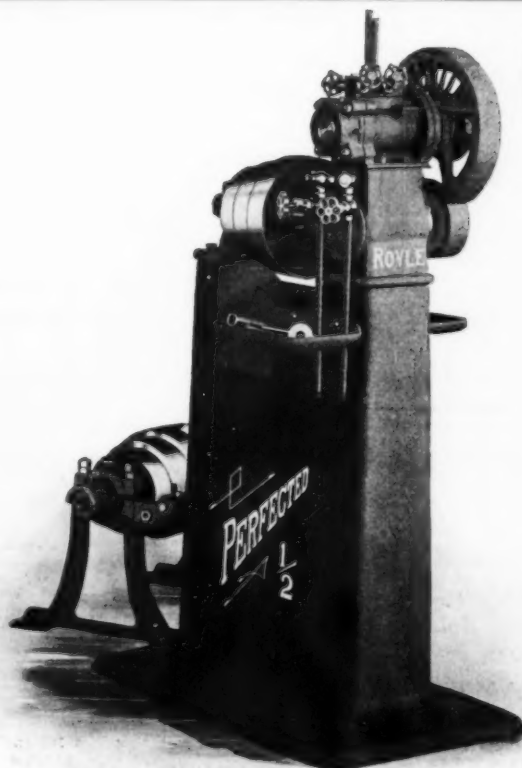
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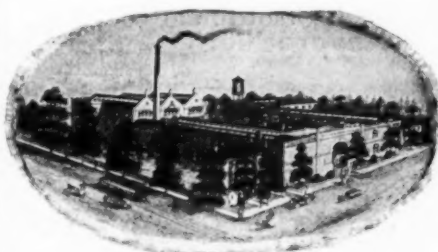
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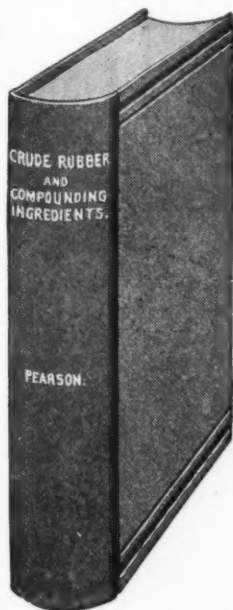
CRUDE RUBBER AND COMPOUNDING INGREDIENTS. A Text-Book of Rubber Manufacture. By Henry C. Pearson, Editor of THE INDIA RUBBER WORLD. Second Edition. New York: The India Rubber Publishing Company, 1909.

This is the second edition of a book which appeared ten years ago, and which may be regarded as a standard work on the subject in English. Since the appearance of the first edition the rubber industry has made rapid strides. New sources of rubber have been opened up and progress has been made in reclaiming waste rubber. In this revised edition the improvements in the art have all been conscientiously noted. The many new compounding ingredients, substitutes and processes find a place in its pages. As it stands the book is a dictionary of compounding facts, and an encyclopedia of rubber factory practice, intended primarily for factory use.

From A LEADING RUBBER MANUFACTURER

Your "Crude Rubber and Manufacturing Ingredients" certainly contains a fund of valuable information, and is used daily in our laboratory as a text-book. To our mind no manufacturer of rubber goods can afford to be without it.

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395 Broadway, New York



The Index, in Pamphlet,
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From THE INDIA-RUBBER JOURNAL, London, June 28.

Mr. Henry C. Pearson's text-book on rubber manufacture, entitled "Crude Rubber and Compounding Ingredients," has now gone into its second edition. A copy of this production is before us and we anticipate a very large demand, for the compilation has been made more attractive than ever and has been brought up to date in every chapter. The first edition appeared ten years ago, and since that time many changes have been chronicled, especially the making of motor tires, which Mr. Pearson describes as a new development, occupying to-day one of the great divisions in the manufacture of rubber goods. New compounding ingredients and substitutes have naturally increased in number in the interval between the two editions, and in the present issue only those of a real or suggestive value have been utilized. As the author claims, it still remains a dictionary of compounding facts; an encyclopedia of rubber factory practice. Attention is drawn to the fact that for some years past the price of crude rubber has been high, and has consequently led manufacturers to inquire into the value of materials, such as Pontianak. Gums of this character are described in the volume before us. - - - There is an additional chapter in the second edition, making a total number of fifteen, which refers entirely to reclaimed rubber and its uses. In this section a brief account is given to the various processes adopted at the present time. - - - We congratulate Mr. Pearson on his second edition and feel that, though it was promised to us in December of last year, it has been well worth waiting for.

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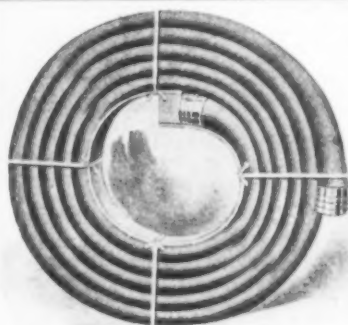
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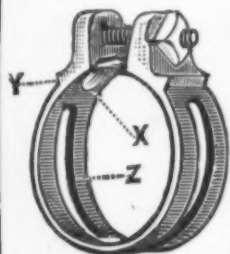
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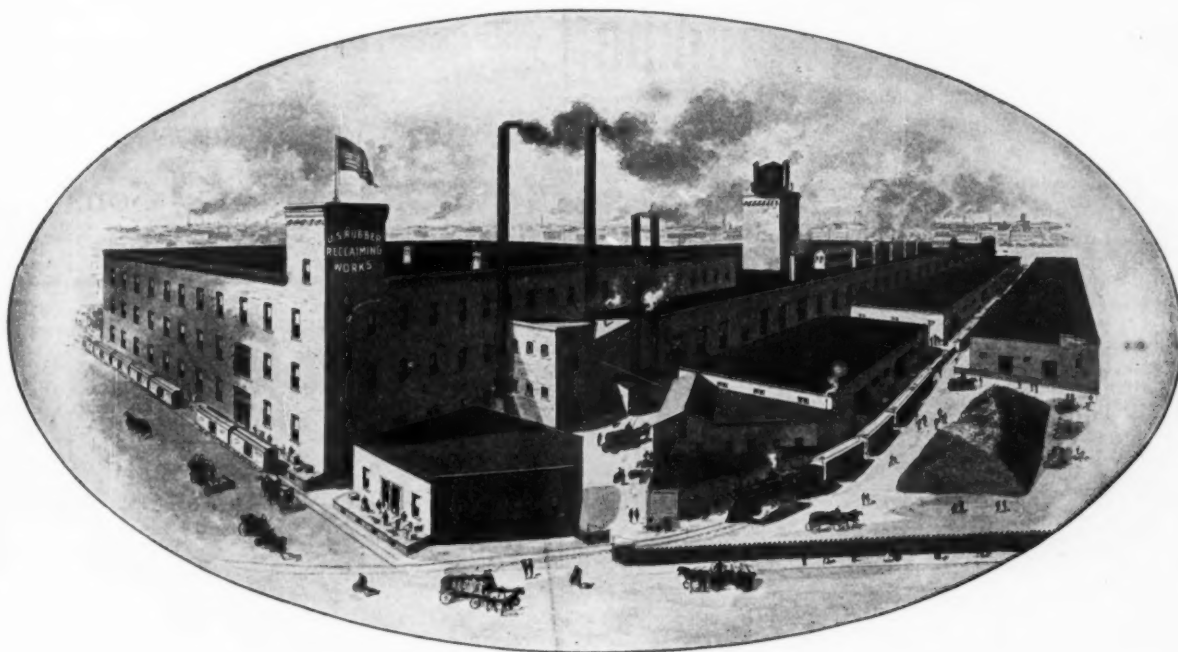
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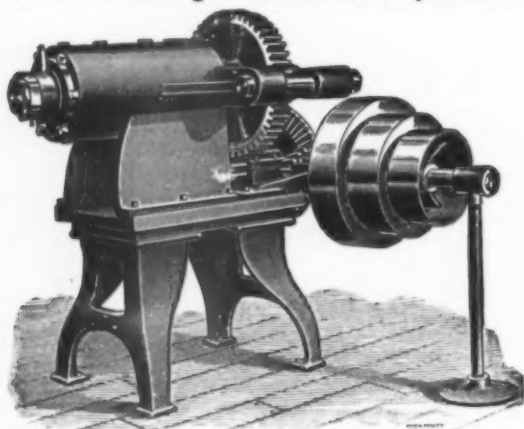
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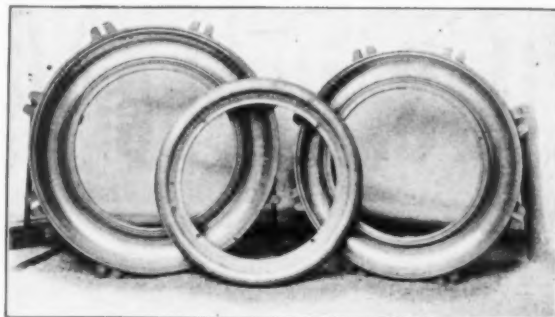
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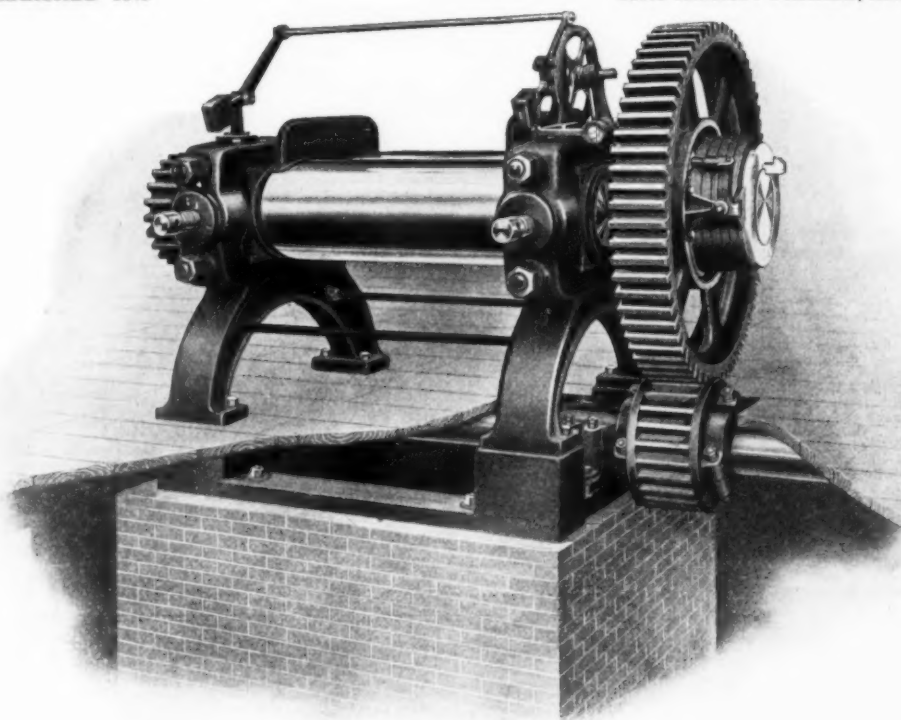
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Gutta Percha & Rubber Mfg. Co., N. Y.
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.
Home Rubber Co., Trenton, N. J.
Manhattan Rubber Mfg. Co., New York.
Massachusetts Chemical Co., Walpole, Mass.

RUBBER BUYERS' DIRECTORY—Continued.

Stair Treads—Continued.

National India Rubber Co., Bristol, R. I.
N. J. Car Spring & Rubber Co., Jersey City, N. J.
New York Belting & Packing Co., N. Y.
New York Rubber Co., New York.
Peerless Rubber Mfg. Co., New York.
Republic Rubber Co., Youngstown, O.
Revere Rubber Co., Boston-New York.
Voorhees Rubber Mfg. Co., Jersey City.

Thread.

B. F. Goodrich Co., Akron, O.
Mechanical Fabric Co., Providence, R. I.
Revere Rubber Co., Boston-New York.

Tiling.

American Hard Rubber Co., N. Y.
Canadian Rubber Co. of Montreal, Ltd.
Continental Rubber Works, Erie, Pa.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.
Manhattan Rubber Mfg. Co., New York.
N. J. Car Spring & Rubber Co., Jersey City.
New York Belting & Packing Co., N. Y.
Peerless Rubber Mfg. Co., New York.
Republic Rubber Co., Youngstown, O.
Voorhees Rubber Mfg. Co., Jersey City.

Tubing.

(See Mechanical Rubber Goods.)
American Hard Rubber Co., New York.
B. & H. Rubber Co., No. Brookfield, Mass.
Davidson Rubber Co., Boston.
Daval Rubber Co., Providence, R. I.
Mattson Rubber Co., Lodi, N. J.
Plymouth Rubber Co., Stoughton, Mass.
Rubber Products Co., Barborton, O.
Tyer Rubber Co., Andover, Mass.
Voorhees Rubber Mfg. Co., Jersey City.

Valve Balls.

Boston Belting Co., Boston.
Cleveland Rubber Co., Cleveland, O.
Continental Rubber Works, Erie, Pa.
Dayton Rubber Mfg. Co., Dayton, O.
B. F. Goodrich Co., Akron, O.
Jenkins Bros., New York.
Manhattan Rubber Mfg. Co., New York.
Mattson Rubber Co., Lodi, N. J.
Mechanical Rubber Co., Chicago.
National India Rubber Co., Bristol, R. I.
New York Belting & Packing Co., N. Y.
New York Rubber Co., New York.
Peerless Rubber Mfg. Co., New York.
Republic Rubber Co., Youngstown, O.
Revere Rubber Co., Boston-New York.

Valve Discs.

American Hard Rubber Co., New York.
Boston Belting Co., Boston-New York.
Continental Rubber Works, Erie, Pa.
Dayton Rubber Mfg. Co., Dayton, O.
B. F. Goodrich Co., Akron, O.
Jenkins Bros., N. Y.
Manhattan Rubber Mfg. Co., New York.
Mattson Rubber Co., Lodi, N. J.
New York Belting & Packing Co., N. Y.
Peerless Rubber Mfg. Co., New York.
Republic Rubber Co., Youngstown, O.
Western Rubber Works, Goshen, Ind.

Valves.

(See Mechanical Rubber Goods.)
Jenkins Bros., New York-Chicago.
Mattson Rubber Co., Lodi, N. J.

Vulcanite Emery Wheels.

Manhattan Rubber Mfg. Co., Passaic, N. J.
New York Belting & Packing Co., Ltd., New York.

Wringer Rolls.

Canadian Rubber Co., of Montreal.
Cleveland Rubber Co., Cleveland, O.
Continental Rubber Works, Erie, Pa.
Dayton Rubber Mfg. Co., Dayton, O.
B. F. Goodrich Co., Akron, O.
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.
Home Rubber Co., Trenton, N. J.
Manhattan Rubber Mfg. Co., New York.
Mattson Rubber Co., Lodi, N. J.
New York Belting & Packing Co., N. Y.
Republic Rubber Co., Youngstown, O.

DRUGGISTS' AND STATIONERS' SUNDRIES.

Atomizers. Nipples.
Bandages. Syringes.
Bulbs. Water Bottles.
Druggists' Sundries, Generally.
American Hard Rubber Co., New York.
C. J. Bailey & Co., Boston.
Boston Woven Hose & Rubber Co.
Canadian Rubber Co. of Montreal.
Canton Rubber Co., Canton, O.
Cleveland Rubber Co., Cleveland, O.
Davidson Rubber Co., Boston.
Daval Rubber Co., Providence, R. I.
Faultless Rubber Co., Akron, O.
B. F. Goodrich Co., Akron, O.
Hodgman Rubber Co., New York.
Huron Rubber Co., Cleveland, O.
Luzerne Rubber Co., Trenton, N. J.
Mass. Chemical Co., Walpole, Mass.
National India Rubber Co., Bristol, R. I.
Parker, Stearns & Co., N. Y.
Pirelli & Co., Milan, Italy.
Rubber Products Co., Barborton, O.
Seamless Rubber Co., New Haven, Ct.
Star Rubber Co., Akron, O.
Tyer Rubber Co., Andover, Mass.
Walpole Rubber Co., Granby, P. I.
Walpole Rubber Works, Walpole, Mass.
Western Specialty Mfg. Co., N. Y.
Balls, Dolls and Toys.
New York Rubber Co., New York.

Combination Fountain Syringe and Hot Water Bottle Fixtures.

A. Schrader's Son, Inc., N. Y.

Combs.

American Hard Rubber Co., New York.

Elastic Bands.

Canadian Rubber Co. of Montreal.
Cleveland Rubber Co., Cleveland, O.
Daval Rubber Co., Providence, R. I.
B. F. Goodrich Co., Akron, O.
Hodgman Rubber Co., New York-Boston.
Tyer Rubber Co., Andover, Mass.

Erasive Rubbers.

Davidson Rubber Co., Boston.
B. F. Goodrich Co., Akron, O.

Finger Cots.

Canton Rubber Co., Canton, O.
Cleveland Rubber Co., Cleveland, O.
Davidson Rubber Co., Boston.
Daval Rubber Co., Providence.
Faultless Rubber Mfg. Co., Akron, O.
B. F. Goodrich Co., Akron, O.
Huron Rubber Co., Cleveland, O.
The Rubber Products Co., Barborton, O.

Gloves.

Canadian Rubber Co. of Montreal.
Canton Rubber Co., Canton, O.
Daval Rubber Co., Providence, R. I.
Faultless Rubber Co., Akron, O.
B. F. Goodrich Co., Akron, O.
National India Rubber Co., Bristol, R. I.
Rubber Products Co., Barborton, O.

Hard Rubber Goods.

American Hard Rubber Co., New York.
Canadian Rubber Co. of Montreal.
Davidson Rubber Co., Boston.
H. O. Canfield Co., Bridgeport, Ct.
Daval Rubber Co., Providence, R. I.
Luzerne Rubber Co., Trenton, N. J.
Stokes Rubber Co., Joseph, Trenton, N. J.
Tyer Rubber Co., Andover, Mass.

Hospital Sheetings.

Bishop Gutta Percha Co., N. Y.
Cleveland Rubber Co., Cleveland, O.
Daval Rubber Co., Providence, R. I.
B. F. Goodrich Co., Akron, O.
Hodgman Rubber Co., New York.
National India Rubber Co., Bristol, R. I.
Plymouth Rubber Co., Stoughton, Mass.
Tyer Rubber Co., Andover, Mass.

Hot Water Bottle Stopples.

A. Schrader's Son, Inc., N. Y.

Ice Bags and Ice Caps.

Canton Rubber Co., Canton, O.
Cleveland Rubber Co., Cleveland, O.
Davidson Rubber Co., Boston.
Daval Rubber Co., Providence.
Faultless Rubber Co., Akron, O.
B. F. Goodrich Co., Akron, O.
National India Rubber Co., Bristol, R. I.
The Rubber Products Co., Barborton, O.
Tyer Rubber Co., Andover, Mass.

Life Preservers.

Daval Rubber Co., Providence.
Hodgman Rubber Co., New York.
National India Rubber Co., Bristol, R. I.

Shower Bath Sprinklers.

Daval Rubber Co., Providence.
A. Schrader's Son, Inc., New York.

Sponges (Rubber).

Faultless Rubber Co., Ashland, O.
N. Tire Rubber Sponge Co., Chicago.
Stationers' Sundries.
American Hard Rubber Co., New York.
Boston Woven Hose & Rubber Co.
Canadian Rubber Co. of Montreal.
Cincinnati Rubber Mfg. Co., Cincinnati, Ohio.
Cleveland Rubber Co., Cleveland, O.
Davidson Rubber Co., Boston.
Daval Rubber Co., Providence, R. I.
B. F. Goodrich Co., Akron, O.
Hodgman Rubber Co., New York-Boston.
Seamless Rubber Co., New Haven, Ct.
Tyer Rubber Co., Andover, Mass.

Stopples (Metal).

A. Schrader's Son, Inc., N. Y.

Stopples (Rubber).

Cleveland Rubber Co., Cleveland, O.
Daval Rubber Co., Providence, R. I.
Erle Rubber Works, Erie, Pa.
Hodgman Rubber Co., New York.
Manhattan Rubber Mfg. Co., New York.
National India Rubber Co., Bristol, R. I.
New York Belting & Packing Co., N. Y.
Tyer Rubber Co., Andover, Mass.

Throat Bags.

Cleveland Rubber Co., Cleveland, O.
Davidson Rubber Co., Boston.
Daval Rubber Co., Providence, R. I.
B. F. Goodrich Co., Akron, O.
National India Rubber Co., Bristol, R. I.
Tyer Rubber Co., Andover, Mass.

Tobacco Pouches.

Canadian Rubber Co. of Montreal.
Davidson Rubber Co., Boston.
Daval Rubber Co., Providence.
Faultless Rubber Co., Akron, O.
B. F. Goodrich Co., Akron, O.
The Rubber Products Co., Barborton, O.
Tyer Rubber Co., Andover, Mass.

MACKINTOSHED AND SURFACE GOODS.

Air Goods (Rubber).

Canadian Rubber Co. of Montreal.
Cleveland Rubber Co., Cleveland, O.
Davidson Rubber Co., Boston.
Daval Rubber Co., Providence, R. I.
B. F. Goodrich Co., Akron, O.
Hodgman Rubber Co., New York.
New York Rubber Co., New York.
National India Rubber Co., Providence.
Rubber Products Co., Barborton, O.
Tyer Rubber Co., Andover, Mass.

Air Mattresses.

Canadian Rubber Co. of Montreal.
Mechanical Fabric Co., Providence, R. I.
National India Rubber Co., Bristol, R. I.

Barbers' Bibs.

Cleveland Rubber Co., Cleveland, O.
Daval Rubber Co., Providence, R. I.
Tyer Rubber Co., Andover, Mass.

Bathing Caps.

Daval Rubber Co., Providence, R. I.
B. F. Goodrich Co., Akron, O.
Rubber Products Co., Barborton, O.

Bellows Cloths.

Boston Rubber Co., Boston.
Cleveland Rubber Co., Cleveland, O.
Hodgman Rubber Co., New York.

Calendering.

Plymouth Rubber Co., Stoughton, Mass.

Carriage Ducks and Drills.

Acme Rubber Mfg. Co., Trenton, N. J.
Cleveland Rubber Co., Cleveland, O.
Empire Rubber Mfg. Co., Trenton, N. J.
Gutta Percha & Rubber Mfg. Co., Toronto.

Clothing.

Canadian Rubber Co. of Montreal.
Cleveland Rubber Co., Cleveland, O.
Gutta Percha & Rubber Mfg. Co. of Toronto.

Hodgman Rubber Co., New York.
National India Rubber Co., Bristol, R. I.
Pirelli & Co., Milan, Italy.

Cravenette.

Cravenette Co., Ltd.

Diving Apparatus.

A. Schrader's Son, Inc., New York.
Hodgman Rubber Co., New York.

Horse Covers.

Hodgman Rubber Co., New York.
National India Rubber Co., Bristol, R. I.

Leggings.

Cleveland Rubber Co., Cleveland, O.
Hodgman Rubber Co., New York.
National India Rubber Co., Bristol, R. I.

Mackintoshes.

(See Clothing.)

Proofing.

Canadian Rubber Co. of Montreal.
Plymouth Rubber Co., Stoughton, Mass.

Rain Coats.

Cravenette Co., Ltd.
Rubber Coated Cloths.
Mechanical Fabric Co., Providence, R. I.

RUBBER FOOTWEAR.

Boots and Shoes.

American Rubber Co., Boston.
Boston Rubber Shoe Co., Boston.
Canadian Rubber Co. of Montreal.
L. Candee & Co., New Haven, Conn.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co. of Toronto.
Hood Rubber Co., Boston.
Lycorning Rubber Co., Williamsport, Pa.
Meyer Rubber Co., New York.
National India Rubber Co., Boston.
United States Rubber Co., New York.
Wales-Goodyear Rubber Co., Providence.
Woonsocket Rubber Co., Providence.

Heels and Soles.

B. & H. Rubber Co., No. Brookfield, Mass.
Boston Woven Hose & Rubber Co.
Canadian Rubber Co. of Montreal.
Continental Caoutchouc & Gutta Percha Co., Hanover.
Foster Rubber Co., Boston.
The Gutta Percha & Rubber Mfg. Co. of Toronto, Ltd.
Massachusetts Chemical Co., Walpole, Mass.
Plymouth Rubber Co., Stoughton, Mass.
Western Rubber Works, Goshen, Ind.

Tennis Shoes.

American Rubber Co., Boston.
Boston Rubber Shoe Co., Boston.
The Gutta Percha & Rubber Mfg. Co. of Toronto, Ltd.
National India Rubber Co., Providence.
United States Rubber Co., New York.

Wading Pants.

Canadian Rubber Co. of Montreal.
Hodgman Rubber Co., New York.

DENTAL AND STAMP RUBBER.

Dental Gum.

American Hard Rubber Co., New York.
Cleveland Rubber Co., Cleveland, O.
Tyer Rubber Co., Andover, Mass.

Rubber Dam.

Cleveland Rubber Co., Cleveland, O.
Davidson Rubber Co., Boston.
Daval Rubber Co., Providence, R. I.
B. F. Goodrich Co., Akron, O.
Hodgman Rubber Co., New York.
Tyer Rubber Co., Andover, Mass.

Stamp Gum.

B. F. Goodrich Co., Akron, O.
Mattson Rubber Co., Lodi, N. J.
Mechanical Rubber Co., Chicago, Ill.
N. J. Car Spring & Rubber Co., Jersey City, N. J.
New York Belting & Packing Co., N. Y.

ELECTRICAL.

Electrical Supplies.

American Hard Rubber Co., New York.
Joseph Stokes Rubber Co., Trenton, N. J.
Massachusetts Chemical Co., Boston.
Mattson Rubber Co., Lodi, N. J.
Tyer Rubber Co., Andover, Mass.

Friction Tape.

Acme Rubber Mfg. Co., Trenton, N. J.
Boston Belting Co., Boston.
Boston Woven Hose & Rubber Co.
Canadian Rubber Co. of Montreal.
Cleveland Rubber Co., Cleveland, O.
B. F. Goodrich Co., Akron, O.
Home Rubber Co., Trenton, N. J.
Massachusetts Chemical Co., Boston.
Mechanical Rubber Co., Chicago.
National India Rubber Co., Bristol, R. I.
Revere Rubber Co., Boston-New York.

Hard Rubber Goods.

American Hard Rubber Co., New York.
Canadian Rubber Co. of Montreal.
Luzerne Rubber Co., Trenton, N. J.
Joseph Stokes Rubber Co., Trenton, N. J.

RUBBER BUYERS' DIRECTORY—Continued.

Insulating Compounds.

Bishop Gutta Percha Co., N. Y.
Canadian Rubber Co. of Montreal.
Gutta Percha & Rubber Mfg. Co., Toronto.
Massachusetts Chemical Co., Boston.

Insulated Wire and Cables.

Acme Rubber Mfg. Co., Trenton, N. J.
Bishop Gutta Percha Co., N. Y.
W. R. Brizey, New York.
The Indiana Rubber and Insulated Wire Co., Jonesboro, Ind.
National India Rubber Co., Providence.

Insulated Wire Waxes.

American Wax Co., Boston.

Splicing Compounds.

Home Rubber Co., Trenton, N. J.
Massachusetts Chemical Co., Walpole, Mass.

SPORTING GOODS.

Foot Balls.

Canadian Rubber Co. of Montreal.
Cleveland Rubber Co., Cleveland, O.

Faultless Rubber Co., Akron, O.
B. F. Goodrich Co., Akron, O.
Hodgman Rubber Co., New York.
National India Rubber Co., Bristol, R. I.

Golf Balls.

Boston Belting Co., Boston.
Canadian Rubber Co. of Montreal.
Davidson Rubber Co., Boston.
B. F. Goodrich Co., Akron, O.
The Gutta Percha & Rubber Mfg. Co. of Toronto, Ltd.

Sporting Goods.

Canadian Rubber Co. of Montreal.
Faultless Rubber Co., Akron, O.
B. F. Goodrich Co., Akron, O.
Hodgman Rubber Co., New York.
Tyler Rubber Co., Andover, Mass.

Striking Bags.

Canadian Rubber Co. of Montreal.
Cleveland Rubber Co., Cleveland, O.
Faultless Rubber Co., Akron, O.
B. F. Goodrich Co., Akron, O.
Rubber Products Co., Harborton, O.

Submarine Outfits.

Hodgman Rubber Co., New York.
A. Schrader's Sons, Inc., New York.

MISCELLANEOUS.

Boxes (Wood).

Henry H. Shelp & Co., Philadelphia.

Brass Fittings.

A. Schrader's Son, New York.

Cement (Rubber).

Boston Belting Co., Boston.
Canadian Rubber Co. of Montreal.
B. F. Goodrich Co., Akron, O.
Manhattan Rubber Mfg. Co., New York.
Massachusetts Chemical Co., Walpole, Mass.
N. J. Car Spring & Rubber Co., Jersey City, N. J.
New York Belting & Packing Co., N. Y.

Chemists.

Chute, H. O., New York.
Maywald, F. J., New York.
Stephen P. Sharples, Boston, Mass.

Consulting Engineers.

Akron Rubber Engineering Co., Akron, O.
M. P. Fillingham, New York.

Rubber Journals.

Gummi-Zeitung, Dresden, Germany.
L'Agriculture des Pays Chauds, France.

Rubber Tree Seeds.

J. P. William & Bros., Heneratgoda, Ceylon.

Tapping Tools.

G. Van den Kerckhove, Brussels, Belgium.

Valves for Air Goods.

A. Schrader's Son, Inc., New York.

MACHINERY AND SUPPLIES FOR RUBBER MILLS.

RUBBER MACHINERY.

Acid Tanks.

Birmingham Iron Foundry, Derby, Conn.

Band Cutting Machines.

A. Adamson, Akron, O.
Birmingham Iron Foundry, Derby, Conn.

Belt Folding Machines.

Birmingham Iron Foundry, Derby, Conn.
Farrel Foundry & Mach. Co., Ansonia, Conn.

Belt Slitters.

Cloth Dryers.

Gearing.

Shafting.

Wrapping Machines.

Birmingham Iron Foundry, Derby, Conn.
Farrel Foundry & Mach. Co., Ansonia, Conn.

Belt Stretchers.

Birmingham Iron Foundry, Derby, Conn.
Farrel Foundry & Mach. Co., Ansonia, Conn.
Hogson & Pettis Mfg. Co., New Haven.

Boilers.

William R. Thropp, Trenton, N. J.
John E. Thropp & Sons Co., Trenton, N. J.

Braiders.

New England Butt Co., Providence, R. I.

Calenders.

Birmingham Iron Foundry, Derby, Conn.
David Bridge & Co., Castleton, Manchester, Eng.
Farrel Foundry & Mach. Co., Ansonia, Conn.
Textile-Finishing Machinery Co., Providence, R. I.

Castings.

A. Adamson, Akron, O.
Birmingham Iron Foundry, Derby, Conn.
Farrel Foundry & Mach. Co., Ansonia, Conn.

Chucks (Lathe).

Hogson & Pettis Mfg. Co., New Haven.

Churns.

American Tool & Machine Co., Boston.

Clutches.

Farrel Foundry & Mach. Co., Ansonia, Conn.

Crackers.

Birmingham Iron Foundry, Derby, Conn.

Devulcanizers.

Biggs Bolter Works Co., Akron, O.
Birmingham Iron Foundry, Derby, Conn.

Edred W. Clark, Hartford, Conn.
John E. Thropp & Sons Co., Trenton, N. J.
William R. Thropp, Trenton, N. J.

Dies.

Hogson & Pettis Mfg. Co., New Haven.

Doubling Machines.

American Tool & Machine Co., Boston.

Drying Machines.

Buffalo Foundry & Machine Co., Buffalo, N. Y.
David Bridge & Co., Castleton, Manchester, Eng.
Joseph P. Devine, Buffalo, N. Y.
Birmingham Iron Foundry, Derby, Conn.
Textile-Finishing Machinery Co., Providence, R. I.

Embossing Calenders.

Textile-Finishing Machinery Co., Providence, R. I.

Engine Steam.

William R. Thropp, Trenton, N. J.
John E. Thropp & Sons Co., Trenton, N. J.

Engraving Rolls.

Hogson & Pettis Mfg. Co., New Haven.

Grinders and Mixers.

Birmingham Iron Foundry, Derby, Conn.
Farrel Foundry & Mach. Co., Ansonia, Conn.
John E. Thropp & Sons Co., Trenton, N. J.
William R. Thropp, Trenton, N. J.

Hangers.

Farrel Foundry & Mach. Co., Ansonia, Conn.

Hose Machines.

A. Adamson, Akron, O.
Birmingham Iron Foundry, Derby, Conn.
New England Butt Co., Providence, R. I.

Hydraulic Accumulators.

Birmingham Iron Foundry, Derby, Conn.
Farrel Foundry & Mach. Co., Ansonia, Conn.
John E. Thropp & Sons Co., Trenton, N. J.

Insulating Machinery.

John Royle & Sons, Paterson, N. J.

Lathes—Hard Rubber.

A. Adamson, Akron, O.

Lathes—Jar Ring.

A. Adamson, Akron, O.
Birmingham Iron Foundry, Derby, Conn.
John E. Thropp & Sons Co., Trenton, N. J.
William R. Thropp, Trenton, N. J.

Machinists' Tools.

Hogson & Pettis Mfg. Co., New Haven.

Moulds.

A. Adamson, Akron, O.
Birmingham Iron Foundry, Derby, Conn.
Hogson & Pettis Mfg. Co., New Haven.
John E. Thropp & Sons Co., Trenton, N. J.
Williams Foundry & Machine Co., Akron, O.

Pillow Blocks.

Farrel Foundry & Mach. Co., Ansonia, Conn.

Presses (for Rubber Work).

A. Adamson, Akron, O.
Birmingham Iron Foundry, Derby, Conn.
Boomer & Boschert Press Co., Syracuse, N. Y.
Edred W. Clark, Hartford, Conn.
Farrel Foundry & Mach. Co., Ansonia, Conn.
William R. Perrin & Co., Chicago, Ill.
John E. Thropp & Sons Co., Trenton, N. J.
William R. Thropp, Trenton, N. J.
Williams Foundry & Machine Co., Akron, O.

Pumps.

Birmingham Iron Foundry, Derby, Conn.
Boomer & Boschert Press Co., Syracuse, Conn.
Farrel Foundry & Mach. Co., Ansonia, Conn.

Racks for Boot and Shoe Cars.

Hogson & Pettis Mfg. Co., New Haven.

Reducing Valves.

Mason Regulator Co., Boston.

Rollers (Hand).

Hogson & Pettis Mfg. Co., New Haven.

Rubber Covering Machines.

New England Butt Co., Providence, R. I.

Separators.

Turner, Vaughn & Taylor Co., Cuyahoga Falls, O.

Spreaders.

American Tool & Machine Co., Boston.
Birmingham Iron Foundry, Derby, Conn.
New England Butt Co., Providence, R. I.

Steam Traps and Specialties.

Jenkins Bros., New York.
Mason Regulator Co., Boston.

Steel Stamps.

Hogson & Pettis Mfg. Co., New Haven.

Stichers (Hands).

Hogson & Pettis Mfg. Co., New Haven.

Strip Covering Machines.

Strip Cutters.

New England Butt Co., Providence, R. I.

Tire Molds.

John E. Thropp & Sons Co., Trenton, N. J.
Williams Foundry & Machine Co., Akron, O.

Tubing Machines.

A. Adamson, Akron, O.
Edred W. Clark, Hartford, Conn.
John Royle & Sons, Paterson, N. J.
Williams Foundry & Machine Co., Akron, O.

Vacuum Drying Chambers.

Buffalo Foundry & Machine Co., Buffalo, N. Y.
Joseph P. Devine Co., Buffalo, N. Y.

Varnishing Machines.

Birmingham Iron Foundry, Derby, Conn.

Vulcanizers.

Biggs Bolter Works Co., Akron, O.
Birmingham Iron Foundry, Derby, Conn.
Farrel Foundry & Mach. Co., Ansonia, Conn.
John E. Thropp's Sons Co., Trenton, N. J.
William R. Thropp, Trenton, N. J.

Washers.

Birmingham Iron Foundry, Derby, Conn.
David Bridge & Co., Castleton, Manchester, Eng.
Continental Rubber Works, Erie, Pa.
Farrel Foundry & Machine Co., Ansonia, Conn.
John E. Thropp & Sons Co., Trenton, N. J.
William R. Thropp, Trenton, N. J.
Turner, Vaughn & Taylor Co., Cuyahoga Falls, O.

Wire Insulating Machines.

New England Butt Co., Providence, R. I.
John Royle & Sons, Paterson, N. J.

SECOND-HAND MACHINERY.

W. C. Coleman Co., Boston.
Phillip McGrory, Trenton, N. J.
M. Norton & Co., Charlestown, Mass.

FACTORY SUPPLIES.

Aluminum Flake.

Aluminum Flake Co., Akron, O.

Antimony, Sulphurets of.

Golden.

Actien-Ges. Georg Egestorff's Salzweser, Lunden, Germany.
Atlas Chemical Co., Newtonville, Mass.
Avery Chemical Co., Boston.

Golden and Crismon.

Joseph Cantor, New York.
Golden and Crismon.
Wm. H. Scheel, New York.

MACHINERY AND SUPPLIES FOR RUBBER MILLS—Continued.**Antimony, Sulphurets of.—Continued.****Artificial Rubber.**

National Co., Chicago.
Stamford (Conn.) Rubber Supply Co.
Typke & King, London, England.

Balata.

George A. Alden & Co., Boston.

Barytes.

Avery Chemical Co., Boston.
Gabriel & Schall, New York.

Benzol.

Avery Chemical Co., Boston.
Barrett Mfg. Co., Philadelphia.
Samuel Cabot, Boston.

Black Hypo.

Joseph Cantor, New York.
William H. Scheel, New York.
Typke & King, London, England.

Carbon Bisulphide.

George W. Speaight, New York.

Chemicals.

George W. Speaight, New York.
S. P. Wetherill Co., Philadelphia, Pa.

Colors.

Joseph Cantor, New York.
William H. Scheel, New York.
Typke & King, London, England.
S. P. Wetherill Co., Philadelphia, Pa.

Crude Rubber.

George A. Alden & Co., Boston.
W. C. Coleman Co., Boston.
Wallace L. Gough Co., New York.
Hagermeyer & Brunn, New York.
Adolph Hirsch & Co., New York.
Rubber Trading Co., New York-Boston.

Dermatine.

The Dermatine Co., London.
Ducks and Drills (Cotton).
J. H. Lane & Co., New York.

Fossil Flour.

Oxford-Tripoli Co., Ltd., N. Y.

Gilsonite.

William H. Scheel, New York.

Graphite Grease.

Jos. Dixon Crucible Co., Jersey City.

Guayule Rubber.

Continental Rubber Co.
Ed. Maurer, New York.

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Rickaby Rubber Mfg. Co., South Framingham, Mass.
Rothschild, H., New York.
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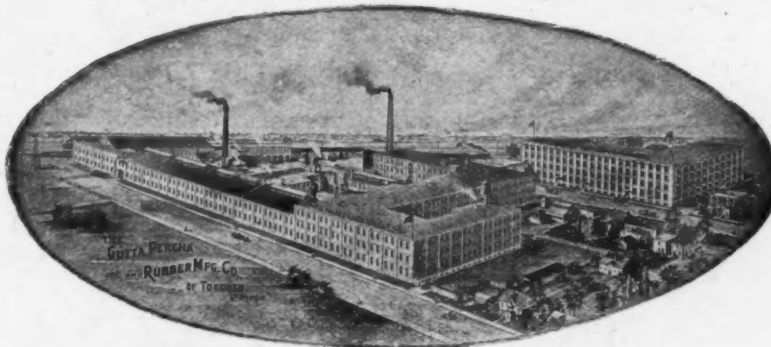
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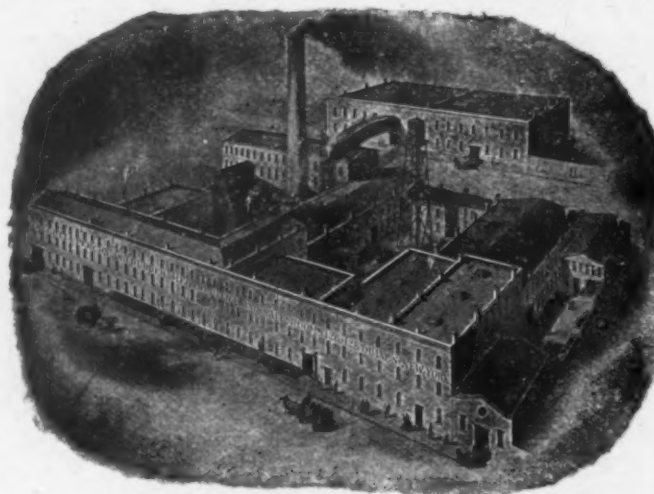
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